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ABSTRACT

This document, the first volume of the summative evaluation of "Man: A Course of Study" (MACOS), focuses on motivation and achievement of students using the MACOS curriculum. The major purpose of the two-year study was to compare MACOS as it was taught in 57 fifth and sixth grade classes in 15 school districts with other social studies curricula taught in 51 comparison classes at the same grade levels. Classes selected for the study exhibited similar racial and socioeconomic characteristics, and were taught by persons with similar teaching experience. The study used pre- and posttests, tape recordings of class sessions, checklists, rating scales, and repeated interviews with teachers and students to determine what was taught, how it was taught, and what course outcomes were for students in areas of knowledge, skills, attitudes, and behavior. Nine measurement instruments were developed to assess achievement and attitude variables. Two instruments measured student ability to organize, interpret, and evaluate MACOS, social science, and ethnographic data. Other instruments evaluated student attitudes toward unusual customs, problem solving, social studies, and the suitability of vivid topics for elementary school students. Findings indicated similarity between MACOS and non-MACOS groups of classes on generalized tests of social studies and inquiry skills, and differences on tests that were curriculum specific. (Author/DB)

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FINAL REPORT

A LONGITUDINAL STUDY

OF

MAN: A COURSE OF STUDY

VOLUME I

SUMMARY, BACKGROUND and DESIGN

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PREFACE

This is the final report of a project that had its origins in a small field study of Man: A Course of Study (MACOS) conducted by Cort, et al., in 1970.* It was a conclusion of that study that it was difficult to anticipate from the formative evaluation conducted by the developers of MACOS how the curriculum would work once it became generally available to a wide variety of schools, teachers and students. It was the belief of many of the teachers interviewed that they could teach the same skills, and encourage development of the same attitudes, by other means. Yet many teachers felt that the curriculum facilitated a student-centered style of teaching, and that it stimulated interest in students which in turn enhanced the opportunity for them to develop a variety of skills and understandings. It was also the conclusion of that study that further evaluation of MACOS should be comparative, and it should be longitudinal. That is, it should systematically attempt to compare MACOS with other programs, and it should not stop with the end of the course.

The present study has followed those guidelines. It may be argued that each social studies curriculum is unique. Each program has its specific goals and particular content. Therefore, to compare programs is to compare apples and oranges. The argument is true in specifics; it is unconvincing at a higher level of generality. At some level, and at some point, most social studies programs appear to have similar aims with respect to the mental and social development of students. In English, a course in Shakespeare has different learning outcomes from a course in Molière. Yet one may hazard the guess that both courses would have certain common underlying goals: to be able to discern the structure and techniques used by the playwright; to be able to see the relationships between the characters and situations of the play and one's own world; to be able to read other plays with deeper understanding, criticalness, and appreciation, to suggest but a few. It is in this sense that most social studies programs seem to have points in common. Certainly there is the issue of course content, and it,of course,in social studies is also related to overarching goals. It *is* important to gain knowledge. Much debate about content in the social studies appears to center on questions of what knowledge, when taught, how taught, toward what ends or goals.

---

* Cort, H. R., Jr., Henderson, N. H., and Jones, C. Approaches to further study of Man: A Course of Study. Final Report. Washington, D.C.: The Washington School of Psychiatry, February 19, 1971.

The present study was most certainly not intended to try to answer such questions. It was intended to be descriptive, but descriptive in a context. The context is social studies in general. Thus, the study has sought to describe MACOS as it was implemented under natural conditions by a variety of teachers in a variety of settings. It has also sought to describe characteristics of MACOS in relation, not to particular alternative programs, but in relation to other programs generally. It has attempted, within the limits of resources and method, to depict similarities and differences of a limited range of course outcomes for students (knowledge, skills, attitudes, behavior), and characteristics of teachers and classes, with those of an aggregate of other courses or programs. The alternative courses or programs came from the same school districts as the MACOS classes. Thus, we have viewed them, in the aggregate, as providing a background or form of baseline for the MACOS classes, also considered in the aggregate.

The study has attempted to explore a number of questions and issues of concern to a variety of audiences. It leaves many questions unanswered. Some questions receive only partial answers. Some questions are not answerable at all, at least within the limits of time and method of this study. The data collected can be used to explore or test hypotheses that time did not permit in this study. It is hoped that others will want to re-analyze, or analyze further,some of the data obtained by this study.

As noted, the study was intended to be descriptive, not judgmental, although inevitably values are involved in determining what and how to observe and describe. It undertook to examine MACOS and other courses as they were likely to be implemented, not as they could be implemented under special conditions of training, supervision, support and the like. Suggestions of what should be taught or how it should be taught were carefully avoided.

The difficult problem of attempting to determine what was taught, and how, was approached in three ways: by tape recording classes to provide transcripts for subsequent analysis; by means of checklists and rating scales completed by students and their teachers; and by means of repeated interviews with teachers and small groups of students from each class during the year.

None of these methods, individually or taken together, provided the detail that would have come from continuous, direct observation. Collectively they did yield substantial information about what the classes in the study did and what they were like.

The study employed pre and post tests that were intended to provide measures of selected knowledge, skills and attitudes. One instrument was based specifically on MACOS course content. Otherwise, the instruments were intended to measure skills and attitudes that seemed related to goals of MACOS and many other social studies programs. Paper and pencil tests and interviews both have limitations as observational and measurement procedures, especially with respect to some of the more complex processes that seem to be the goals of many social studies programs. Thus, views of processes and outcomes in the MACOS and other courses in this study have to be regarded as constrained by those two main filters.

The project reported here is the result of the efforts, interest and cooperation of many people: teachers, students, principals, administrators, staff, consultants and others. The project would like to express appreciation to all who participated. Districts, schools, teachers and students were assured anonymity and thus cannot be listed to receive the recognition to which they are so thoroughly entitled. It is hoped that they will find, especially in the summary of the study, that their time and effort has been to good avail.

It is appropriate also to acknowledge the role of the National Science Foundation. It was of course the granting agency. The NSF at no time attempted to influence what was done once the study was started. It has not attempted in any way to influence findings, interpretations, or conclusions. It has encouraged the project to make its findings, both positive and negative with respect to MACOS, as readable and widely accessible as possible. Shortcomings in those regards are the responsibility of the project, not the fault of the NSF.

The study has been independent. It has of course been shaped by many considerations, methodologically as well as substantively. It has tried to maintain a perspective of issues, characteristics and concerns of the broad field of the social studies, and to examine MACOS in that perspective as well as to inquire about its unique properties.

ERRATUM

On page 14 of the Summary Report (and the Summary section of Volume I of the full report), the first sentence under the heading, " Attitudes Towards Problem-Solving ", should read as follows:

On the CAPS tests at posttest, the MACOS classes were not significantly different from non-MACOS classes, on the average, in interest in problem-solving, tolerance of ambiguity in problems, and perceived ability to think creatively.

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We would like to acknowledge and express appreciation to staff and consultants.

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There have been a number over the period of four years, but two in particular warrant special mention. Ms. Julie Lassiter aided the project in innumerable ways during the hectic year from pretesting to posttesting. To Ms. Irene Whalen fell the task of typing and re-typing the full report, with all its tables and figures.

There have been a number of other persons involved in the various tasks of preparing and reviewing data sheets, doing tabulations, filing and compiling data, and other similar tasks. Their assistance has been much appreciated.

Group Operations, Inc., prepared computer tapes and did a number of preliminary data analyses. Mr. David Pee was the programmer in charge.

Pilot Testing

We would particularly like to express thanks to the many school, teachers, and students, especially in Washington, D.C., but also in California, Maryland, New York, Ohio, Pennsylvania, and Virginia, who assisted in testing, and re-testing, various instruments and interviews employed in the study, and in providing the data needed to scale items on one of the instruments.

Consultants

A number of consultants have contributed to the project at various times, to different extents, and in various capacities. Some now have positions other than those indicated below. Some will be mentioned twice for reasons that will be clear.

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This panel helped conceptualize and focus the original study design, from which the present study derived.

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Core Consultants

The following have been the continuing advisers and consultants to the project. They have contributed centrally to the focus, design, analysis, and interpretation of the study. Its good points reflect their thinking, advice and assistance. They are not, of course, responsible for its limitations.

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Finally, we would like to express special thanks to Ms. Elizabeth C. Cort for the countless hours and days of time she gave voluntarily to help the project, and for her unflagging encouragement.

H. Russell Cort, Jr.

Nancy Peskowitz

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SUMMARY

The following pages contain a summary of the project. They also contain interpretations, where they appeared to be useful, and conclusions.

This summary is intended to serve two purposes. It is included at the beginning of the full, final report of the study to provide the reader with an overview of what to us appear to be the main findings of the study. The summary is also intended for separate distribution to a wide variety of audiences that may have neither the time nor the inclination to go through the full report. It is thus written principally with such audiences in mind. Technical details have been avoided, although we have tried to make clear the bases and limitations of concluding statements. Because the summary serves a dual purpose, it contains some background description material that is also contained, although in more detail, in the full report.

The summary starts with a brief description of the project. The next section presents major outcomes or findings, particularly with respect to achievement and attitudes of students. Following that is a section dealing with characteristics of the two groups of classes in the study: the MACOS group, and the comparison non-MACOS group. This section includes a report on interrelationships among major groups of variables that were examined in the study. That is followed by a section on the MACOS and non-MACOS teachers. Finally, there are concluding remarks.

BRIEF DESCRIPTION OF THE STUDY

This is a summary of a two-year study of Man: A Course of Study (MACOS), as it was taught in 57 fifth grade, sixth grade, and 5/6 non-graded classes during the 1974-75 school year. The classes were in 15 school districts in 11 states.* There were 51 comparison classes in the same districts at the same grade levels. Most districts were suburban; some were urban and rural.

The districts and classes in the study were not random samples. They were districts and classes that met certain criteria for inclusion in the study, and that agreed to participate. The districts were originally recruited by means of a questionnaire sent to all public school districts. An aim of the study was to have only one class (MACOS or non-MACOS) per school within a district. That aim was not always met. With two exceptions, however, MACOS and non-MACOS classes did not come from the same schools.

The aims of the study, broadly stated, were to examine what MACOS students seem to learn, what they retain, and how what was learned was different from what they might have learned otherwise. MACOS is one of the more elaborate developments of the "new social studies" projects of the 1960's. It was originally designed as a one-year course for upper elementary children. It appeared to combine the content and methods of behavioral science with a humanistic orientation towards education. It was an attempt to embody in a curriculum the concept of the structure of a discipline. That is, it was based on the premises that: 1) disciplines have an underlying structure (set of principles, relationships, assumptions, etc.); 2) the structure serves to organize the myriad of available facts and information, and to stimulate further inquiry; 3) the structure can be grasped in some form by students of almost any age; and 4) grasping the organizing structure is an aid to effective learning and a motivating force for further learning. The curriculum was thus built on the "spiral design" in which certain concepts and principles are introduced in simple form, and elaborated in greater complexity and scope as further principles and conditions are introduced.

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* California, Colorado, Florida, Illinois, Iowa, Nebraska, New Jersey, Pennsylvania, Oregon, Virginia, Washington.

The goals of MACOS are broad and not easily translated into specific operational terms. The curriculum attempts to embody certain principles of learning formulated by Bruner. It provides the opportunity for information to be obtained in many ways, e.g., from written materials, films, records, games, discussions . It seeks to encourage students to learn together, and to interact with each other, as a motivating device. It encourages teachers to take a problem-solving role rather than a lecture or question-answer-question approach to teaching. It encourages multiple approaches to the presentation of topics, and thus tries to influence teachers to adapt to the various interests and abilities of their students. It seeks to command interest in students by authenticity or realism; it is as concerned with how things are learned as with what is learned (process is as important as product). It has a hierarchy of concepts, but it is not designed on a behavioral objectives model, or on a hierarchy of behavioral objectives.

MACOS thus was an ambitious and interesting curriculum from a number of points of view. It has stimulated controversies almost from its inception. It was pilot-tested extensively, and an elaborate formative evaluation was conducted. Questions remained, however, about what would happen when the curriculum became generally available. As one alternative program among which schools can choose, how does it seem to work? What is different about MACOS from other programs? What is similar? Is there evidence that it achieves its goals? If so, with whom? Under what conditions? What is the consequence to students of taking MACOS for a year? What, in fact, is a MACOS program?

These questions are broad. The present study was intended to examine MACOS classes as taught by a variety of teachers in a variety of settings. It has undertaken to examine the effectiveness of MACOS with respect to achievement and motivation. It has sought to explore what teachers and students see themselves as doing in MACOS, and why. The basic method has been comparative. The study has been primarily descriptive. It has attempted to delineate a number of similarities and differences of MACOS, compared to a variety of programs that students might otherwise have had. It has essentially asked: if one implements MACOS, what are some of the results in classroom processes and student learning that one can expect, and how, on the average, are they similar to and different from those of an aggregate of other programs?

It was not the purpose of the study to compare MACOS to other particular curricula, nor were other particular programs sought as comparison classes. Thus, the group of classes called non-MACOS was a collection of a number of different programs. The non-MACOS classes differed among each other, and from MACOS classes, with respect to specific content. There were many commonalities, however, within and between the groups of classes with respect to broad objectives, methods, problems and contexts. Indeed, except for specific content and specific content-related objectives, there were no variables or characteristics examined in this study that were unique to all the MACOS classes or to all the non-MACOS classes. While there were significant differences between the MACOS and non-MACOS groups of classes for some classroom process (what was done), climate (what students thought of classes), posttest and follow-up variables, there was no variable on which *all* MACOS classes were better or worse, higher or lower, more or less, than *all* non-MACOS classes.

Since an aim of the study was to examine MACOS and non-MACOS classes as they were likely to be taught under natural conditions, no requirements were set for what should be taught, or how. Indeed, every effort was made to avoid suggesting what teachers should do or cover.

Methods

MACOS and non-MACOS classes were given pretests and posttests intended to measure selected specific and general achievement and attitude variables. Pretest instruments were also administered to teachers.*

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* Two of these were Kerlinger and Pedhazur's *Educational Scale VII*, and Pedhazur's *Teachers at Work* scale. Both were intended to provide measures of progressive and traditional attitudes toward educational practices and goals.

Random samples of students from each class were interviewed at three different times during the year; teachers were also interviewed at those times. A tape recording was made of each class, and the transcripts of a random sample of classes from each group were analyzed using the Aschner-Gallagher system for analyzing convergent, divergent, and evaluative thinking questions.

Shortly after midyear, classes completed a series of rating scales, adapted from Joe M. Steele's Classroom Activities Questionnaire. The scales were intended to provide measures of classroom activities and emphases (processes) as perceived by students. There were also scales of classroom climate (satisfaction, apathy, difficulty), again as perceived by students. The climate scales were from Walberg's My Class, and Anderson's Learning Environment Inventory. At the same time, teachers completed ratings of the frequency of activities, and of curriculum emphases in their classes. District coordinators provided information about the schools involved in the study, about the districts, about procedures and policies for selecting social studies and other curricula, and about the ways in which MACOS and other social studies curricula had affected the school system. The following year, they also provided some information about costs.

During the next school year (1975-76), two follow-ups were made with a 50% sample of students from each previous class. Follow-up sampling was limited to students who had been in the previous MACOS or non-MACOS class for the entire year. The first follow-up was made in October, and the second one in May, a year after MACOS. Paper and pencil instruments were administered each time. In addition, a group discussion was held with each class in the first follow-up. In the final follow-up, some instruments that had been given pre and post the preceding year were readministered.

The pre - post instruments were:

Achievement

A Questionnaire About Animals and People (AP), which contained questions from (or modified from) the MACOS formative evaluation, and the MACOS Evaluation Strategies booklet. Part of this test was included in the second follow-up.

Sequential Tests of Educational Progress (STEP), Social Studies (Series II, Form 4A), a standardized test of social studies skills and knowledge.

Interpretation of Data Test (IDT), a test, developed for the Taba program, of ability to interpret and use ethnographic data.

Attitudes

Study Choices (SSCh), a pair-comparison instrument in which preference for social studies was indicated individually in relation to math, science, English, spelling and reading (scored here by counting the number of times social studies was chosen). A modified version was included in the second follow-up.

What Would You Think, Part A and B, (WWA, WWB), which asked students to indicate their reactions to unusual, hypothetical beliefs, customs or behavior (Part A), and toward persons or groups that would have such beliefs, customs or behavior (Part B). This instrument was repeated in the second follow-up, along with two additional items of a similar kind.

Children's Attitude Toward Problem-Solving Inventory (CAPS), developed by Martin Covington at Berkeley, and scored here for four separate scales derived from a factor analysis: interest in problem-solving; ability to solve problems; tolerance of ambiguity in problems; and creativity in thinking or problem-solving.

Major analyses of results were of two kinds: comparisons of differences between MACOS and non-MACOS classes as groups, and examinations of relationships among variables. In both cases, the unit of analysis was the class, i.e., the individual measures were class means. Class means were based on scores from students who had been in a class all year. Some item analyses, and analyses of certain opinions, were also done using the individual student as the unit of analysis. The distinction is important, since results based on class means do not necessarily apply to individuals, and results based on individuals do not necessarily apply to classes.

MAJOR OUTCOMES

Variation in Implementation

One of the most striking features of the MACOS classes in this study was the variation in implementation. The total amount of time spent on social studies as a whole was similar in both MACOS and non-MACOS groups. The average was about $3\frac{1}{4}$ hours per week for 27 to 30 weeks. The percentage of MACOS lessons actually taught by the time of posttesting, however, ranged from 16 to 100%. The typical pattern was to supplement MACOS with other lessons or programs. While teachers did not reverse the order of lessons, they would often omit one or more lessons. Some teachers said they found that MACOS seemed particularly suited for branching into other units or lessons. They felt that such flexibility was a strong point. There were classes in the study that were straight MACOS classes. But if the MACOS classes in this study are at all indicative of how the curriculum is implemented in general, one would have to conclude that diversity of adaptation is the prevailing mode.

Achievement Outcomes

Despite this diversity of implementation, MACOS classes did learn similar content. MACOS classes scored significantly higher than non-MACOS classes, on the average, on the MACOS-specific test given at posttest, and on a sub-part of it given again a year after the course.* Periodic interviews with students confirmed the development of detailed course knowledge, just as they did with students in non-MACOS courses.* Students obviously did tend to learn what they studied rather than something else. However, an analysis of items on the MACOS posttest suggested that, at least as measured by the test, the learning was most effective with facts and terms, and least effective with some of the more abstract concepts of the course such as structure, function, and language. At posttest, sixty-two percent of MACOS and non-MACOS students alike classified "human being" as "the opposite of animal," when the choice considered correct was "a mammal and a primate." Since performance on the part of the test covering such abstract concepts was significantly related to the age of students (sixth grade MACOS classes tended to do better than fifth grade classes), it seems reasonable to conclude that the course was generally more appropriate for older students insofar as mastering the more abstract concepts and relationships is concerned.

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* Throughout this report, the .05 level of chance is used as the criterion of significance of a difference or a relationship.

On more generalized tests of social studies skills (i.e., on tests that were not curriculum-specific), taking MACOS neither helped nor hindered classes, on the average. For example, there were no significant differences at pretest or at posttest between the MACOS and non-MACOS groups of classes on the STEP Social Studies test (Series II, Form 4A). The same was true of performance on the Interpretation of Data test (IDT). In an experiment conducted by the Antioch study shortly after midyear, groups of four students from each class, chosen at random, were asked to compare two scenes, one historical (early America) and one modern, and to speculate on similarities and differences of the problems faced by the two groups of people. We found no differences between MACOS and non-MACOS groups in quality or quantity of hypotheses proposed, on the average, nor in a tendency to test or explore proposed hypotheses. The latter was regarded as an indication of constructive, problem-solving interaction among students. There was great variation in sophistication and productivity among the samples of students both in the MACOS and non-MACOS groups. Other interview material, during the course and in follow-up, gave no suggestion that there were differences between MACOS and non-MACOS groups in their understanding or use of inquiry skills, although again there was much variation within both groups.

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* All interviews with students, except in the first follow-up, were conducted with a random sample of four students from a class. The students were interviewed as a group. Interviews were taped, and transcripts were coded by three readers working independently. If at least one student in the group mentioned a topic or a reaction, that response was counted as pertaining to the whole class. Thus, interview results are typically stated in terms of classes.

Development of inquiry skills was said to be a part of the social studies program by nearly all teachers. Such skills, when described by teachers in interviews, included questioning or analyzing what was seen, read or heard, forming hypotheses, gathering information, evaluating information, drawing conclusions, making generalizations. Teachers described different methods of developing such skills. In interviews, students rarely used spontaneously a vocabulary suggestive of the elements of an inquiry methodology. Students in different classes described how they would compare things: how they would discuss questions over which there was disagreement; how they would go back to references (books, films, etc.) to resolve disagreements, which were typically over the correctness of asserted facts. On questions of opinion or belief, students described having a discussion to hear different points of view, or taking a poll (during the class). Teachers typically said they guided such discussions, trying to make sure that different points of view were heard (depending on the subject, the class, and the teacher), and would sometimes assign students to look up, and to report on, a topic or subject over which there was disagreement or uncertainty.

The data of this study do not provide systematic information about the development of inquiry skills, or of organizing models or techniques. Such data as the study obtained, from paper and pencil instruments, interviews, and a special problem-identifying experiment undertaken with students during an interview period, suggest that: 1) such developments are not usually articulated by students; 2) there is great variability of development from class to class and within classes; 3) there is need for much more subtle and extensive methods of observation and assessment than this study was able to employ in order to assess such developments reliably in the social studies. Perhaps the development of inquiry skills and conceptual models in young children is similar to the development of language. They develop; then later one learns to name, describe and analyze the elements, rules and principles for what one has been doing all along, as well as to improve upon the process. It did seem, however, that an attempt to provide students with a vocabulary and statements of objectives for classifying and analyzing situations and problems, as well as much guided practice, would be helpful. If the former were done systematically in the classes in this study, we failed to detect it.

Analysis of tallies of data from interviews with teachers and students indicated that non-MACOS students were much more likely than MACOS students to be exposed to training in specific skills (how to make maps, how to read them). Some MACOS teachers, however, incorporated special units on such skills. Students in different classes reported learning various how-to-do-it skills -- e.g., how to make an igloo, how to make a piñata. Non-MACOS classes, more than MACOS classes, were likely to describe writing reports as a recurring activity. Thus, non-MACOS students, on the whole, had more opportunity to practice skills involved in that task.

Teachers in both groups of classes (MACOS, non-MACOS) sometimes had particular problems teaching students how to work cooperatively in small groups on a task or assignment. Some teachers gave up and reorganized the management of instruction. Others invested unanticipated amounts of time and effort to help students learn to work cooperatively and constructively together. It is impossible to say from the data of this study what the success of such training was, or to what extent whatever learning took place transferred to other situations.

In sum, students did tend to learn much about the content of whatever they were studying. The details described by them in interviews tended to be about facts. Students would use the vocabularies of their particular courses with varying degrees of accuracy and appropriateness. They would describe what animals or people did; they would describe customs; they would often give reasons for how, or for why, things were done as they were in different countries or cultures; they would make comparisons; they would make judgments.

Within any class, of course, there was a range of mastery and comprehension, even of factual material.

Attitudes Toward Problem-Solving

On the CAPS tests at posttest, the MACOS classes were significantly different from non-MACOS classes, on the average, in interest in problem-solving, tolerance of ambiguity in problems, and perceived ability to think creatively. Non-MACOSclasses tended to score more positively, on the average, than MACOS classes on perceived ability to solve problems. There was indication in the MACOS group that more interest in problem-solving tended to go along with more complete implementation of the MACOS curriculum. MACOS classes may have stimulated more positive perceptions or attitudes about problem-solving in individuals, but comparisons of class averages between groups did not suggest a systematic effect for three of four of the measures used. It is concluded that the MACOS classes in general did not stimulate confidence in the powers of one's mind significantly more than the aggregate of non-MACOS classes. Indeed, the MACOS classes tended to have comparatively less positive perceptions of ability to solve problems. *

Attitudes Towards Different People and Customs

On the instrument (What Would You Think) intended to measure students' attitudes towards or reactions to unusual, hypothetical customs, beliefs and behavior, as well as to peoples or groups that might have them, there was tentative indication that MACOS classes on the average reacted more positively

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* The computed reliabilities of the CAPS sub-tests for class means (but not for individuals) were extremely low. It is possible that re-anaysis, based on types of individuals, would yield different conclusions.

to the customs or beliefs at posttest than the non-MACOS classes. There was, however, no significant difference between the two groups of classes on that measure a year after the course. With respect to reactions to groups of people who might have such customs or beliefs, differences between MACOS and non-MACOS classes fell short of significance at posttest. There was marginal indication that MACOS classes tended to react more positively toward people who might have such customs than non-MACOS classes, on the average, a year later (the data were from a random 50% sample of students from each former class). These results are called tentative or marginal for several reasons, one being that the computed reliability of the instrument was very low, even for class means. We interpret the results to suggest that there can be influences of MACOS on reactions of classes to strange or unusual customs or beliefs. The influences may be small and transient; they are nonetheless suggestive in that they at least seem consistent with MACOS goals. More extensive and reliable measurement would provide clarification.

In interviews with students we found no systematic indication of differences between MACOS and non-MACOS groups of classes in general attitudes toward the cultures or countries they had studied. Students, if they were not bored with the whole matter, tended to see both positive and negative points about whomever or whatever they studied. Students in both groups were most likely to feel negatively about customs or practices they saw as unfair, cruel or exploitative. MACOS students, aside from being appalled at (or intrigued by) the Netsiliks' eating preferences and habits, were apt to be dismayed at their treatment of animals, at the manner in which they killed animals, at their treatment of the elderly. Aspects of the Netsilik culture that students admired were their conservation practices (making maximum use of available resources and not wasting anything, not polluting the environment), and the atmosphere of closeness and caring created in families (a number of students also envied the Netsilik children not having to go to school). Non-MACOS students were similarly negative about practices they had learned about that seemed unfair, cruel or exploitative (human sacrifices, pre-arranged marriages, slavery, treatment of Indians by early Americans, poverty -- to name a few topics given by students). We found no students giving any indication that they would want to trade places with the Netsilik; no one appeared to have developed a desire to eat fish eyes. Two MACOS students, out of over two hundred interviewed, mentioned that the act of abandoning the old woman on the ice was desirable in the sense of being necessary for group survival. Most students who mentioned that event at all thought some other solution should have been found. Most students who mentioned Netsilik customs such as putting ashes on fishes' eyes seemed to regard them as interesting customs, but in the nature of superstitions. Many students in both groups, MACOS and non-MACOS, when mentioning a custom that was different from ours, but not seemingly cruel or unfair, would add statements to the effect that "they have their ways, we have ours."

In sum, nearly all classes in both groups, when interviewed at posttest, felt they had learned about customs, beliefs or the way people lived that seemed strange. The majority of classes in both groups felt they had learned about customs or ways of life they thought were wrong. Finally, the majority of MACOS and non-MACOS classes cited examples of customs, beliefs or ways people live about which they had learned that seemed commendable.

Attitudes Toward Vivid Topics in Retrospect

In an attempt to assess continuing opinions of or attitudes toward potentially vivid or controversial topics students may have studied, students were asked on questionnaires twice during the year following MACOS if certain topics had bothered or upset them. In the final follow-up at the end of the year, the two topics that a small fraction (at most, 11%) of MACOS students (not classes) continued to indicate had botheredthem were 'killing animals' and 'leaving people to die,' if they also continued to say they had learned about such matters in social studies the year before. There were also small fractions of former non-MACOS students a year later who still indicated they had been bothered or upset over certain topics (e.g., slavery) that they had studied the year before.

Students were of different opinions about the suitability of various topics for their age group to study. The main themes expressed (if not a flat yes or no about suitability) in interviews with both groups were that students should have options, and that much depends on how the teacher handles a topic. If the teacher made an effort to treat a topic seriously, not to respond to sensational aspects, and to help students see the various implications, students felt that otherwise emotional or vivid topics could be handled constructively by most people their age.

In follow-up interviews with 50% samples of students from each class conducted in October the next year (five months after MACOS), students were asked if they could remember anything that upset or excited the class. A far greater percentage of MACOS classes (77%) than non-MACOS classes (11%) gave examples we categorized as gory customs or behavior of animals. For MACOS students examples of these were typically what the Netsilik ate and how they ate; how they killed and skinned animals; baboons tearing food apart; herring gulls regurgitating food for their chicks. For non-MACOS classes examples included bull fights, cannibalism (the plane crash in the Andes), and human sacrifices. Classes in both groups mentioned topics falling into the categories of exploitation of people (e.g., slavery), and cruelty.

Subjects or events that were recalled as particularly exciting by MACOS classes included making igloos, games, going on an archeological dig, films (especially on salmon, and on the family life and social organization of baboons), and discussions. Non-MACOS classes recalled excitement over making dioramas, pottery, piñatas, Russian and Japanese life styles, field trips, group work and projects, discussions and debates.

A greater variety of other negative topics or events was recalled by non-MACOS than MACOS classes. These included: crime, a movie on sex, debates over money made by athletes, Vietnam, bussing, hunger and starvation in other countries, pollution, voting, fish-bowling sessions (personal questions), conditions in ghettoes, conditions in coal mines. Some MACOS classes mentioned that the class was upset over matters such as: MACOS was boring, Eskimos all sleeping together on a platform, the teacher asking personal questions.

It may be noted that no statement can be made from the data of this study about psychological impacts, short-term or long-term, positive or negative, of MACOS or any other program. The data show that there were topics or situations that some students reacted to strongly. They also show that fifth graders in both groups were more likely to react more strongly than sixth graders to vivid scenes or situations on questionnaires and in interviews.

Social studies, perhaps more than other subjects, does have the potential for engaging in important issues and evoking strong reactions.

Attitudes Toward Classes During the Course

MACOS affected attitudes toward classes. Midway through the year, three measures of classroom climate (*satisfaction*, *apathy*, and *difficulty*), based on students' ratings, were obtained. MACOS classes, on the average, compared to non-MACOS classes, had significantly more positive ratings on all three measures. The three measures were highly intercorrelated. Thus, a conservative interpretation is that MACOS classes, on the whole, tended to like their social studies course more than non-MACOS classes tended to like theirs. There was, of course, a distribution of such reactions in both groups. Some non-MACOS classes were far more positive than some MACOS classes. The averages, however, favored the MACOS group of classes.

Attitudes Toward the Course in Retrospect

The following year (in October), former MACOS classes were significantly more likely, on the average, to find their present social studies program less interesting, compared to the previous year, than former non-MACOS classes found theirs. Considering the variation in amount of implementation of MACOS *per se*, at least some of that reaction must, of course, have had to do with the teacher and with how the course as a whole had been conducted. A year after taking MACOS, former MACOS students tended to give more positive recommendations about MACOS than former non-MACOS students gave about their prior courses. Former sixth grade (the older students) MACOS students were more positive than former fifth grade MACOS students. This again suggests that MACOS tended to be more appropriate for older students with respect to interest as well as achievement.

In the first follow-up, former MACOS classes were less likely than non-MACOS classes to feel they had missed some content (topics, subjects) that would now be useful to them in social studies. The topics that appeared to stand out for non-MACOS students had to do with animal behavior, and with similarities and differences in ways animals and people behave. There was some indication from MACOS students that learning about the history and customs of the United States and other countries would have been advantageous to them in their present programs.

There was some indication from former MACOS students in the first follow-up that some students would have found it advantageous now in social studies to have had more opportunity to learn how to make or use maps, how to make or use graphs, how to find information in the library, and how to write reports. When class averages of ratings of the present advantage of having learned these and other skills were considered, the differences between the MACOS and non-MACOS groups were marginal, but still suggestive of the tendency just described.

Students from the former MACOS and non-MACOS classes were asked in an interview, in the first follow-up (October), to describe what they missed from last year's social studies class. The predominant response from classes in both groups was group work, projects, and art work (MACOS, 58%; non-MACOS, 56%). There were major differences, however, in the percentages of classes in the two groups mentioning other categories of things that were missed. Forty-four percent of the MACOS classes mentioned missing the course content, or what they had learned or read about (compared to 9% of the non-MACOS classes). Forty-four percent of the MACOS classes, compared to 13% of the non-MACOS classes, also mentioned films they had seen. And 31% of the MACOS classes, compared to 9% of the non-MACOS classes, mentioned missing games and plays. Equal percentages of classes agreed that they did not really miss anything from last year (MACOS, 12%; non-MACOS, 13%).

Discussions were mentioned by 39% of the MACOS and 33% of the non-MACOS classes. Discussions were more likely to be mentioned in both groups by former sixth grade than fifth grade classes. MACOS fifth grade classes, however, were much more likely to mention missing the games and plays, as well as course content (what they had learned), than MACOS sixth grade classes. MACOS sixth grade classes were more likely to mention group work, projects, and art work than MACOS fifth grade classes. Both grade levels of MACOS classes mentioned the films equally frequently.

These results strongly suggest the vividness that MACOS had for many students. The content stood out in mind, as well as some aspects of the methodology. But they also give further indication of grade level differences in reactions to the course. The older students (former sixth graders), for example, seemed to have been more challenged and engaged by discussions, on the whole, than former fifth graders, if one uses retrospection as an indicator. The same relationship occurred in the non-MACOS group of classes, although not as markedly. The greater stimulation of discussions for sixth grade classes may have been because it was a more frequent activity than it was for fifth grade classes. But there may well also be a maturation factor involved.

Attitudes Toward Social Studies in General

MACOS seemed to have a temporary effect on attitudes toward social studies in general. MACOS classes, on the average, scored higher at pretest, than non-MACOS classes in preference for social studies, compared to other subjects. MACOS had already started when the pretest instrument was given. Results may have reflected initial enthusiasm for a different course. The attitude of MACOS classes at posttest, once pretest was taken into account, was not significantly more positive, on the average, than non-MACOS classes. A year after the MACOS and non-MACOS courses, there were no differences in any sense between former MACOS and non-MACOS classes on this measure. Both groups of classes, a year later, had slightly positive attitudes, on the average, toward social studies when asked to rate how much they liked it for itself, not in comparison to other subjects.

Attitudes Toward Social Studies Compared with Other Subjects

It was found that during the year students took MACOS, sixth grade MACOS students showed a greater relative increase in preference for social studies, compared to other subjects, than fifth grade students. This is taken as further indication that MACOS tended to be more appropriate for sixth graders than for fifth graders. For both groups and grade levels except MACOS sixth graders, social studies started and ended ranking fifth in preference (after arithmetic, science, reading and spelling). Only English consistently ranked lower in comparative preference. For MACOS sixth graders at the end of the course, social studies ranked fourth, followed by spelling and English. (For all groups of students, reading and arithmetic tended to be the preferred subjects, both pre and post, when students had to choose, with science running a close third). The general conclusion is that, while students did not, on the average, positively dislike social studies, social studies ranked low in preference when compared with other courses. There was evidence of a temporary increase in preference for social studies among MACOS students, particularly sixth grade ones. By the measures and methods of this study, there were no general enduring effects on attitudes of classes toward social studies beyond the year of the course, although, as has been noted, former MACOS classes, on the average, found the next year's class less interesting by comparison than former non-MACOS classes.

Relevance of Social Studies

We found, from interviews with students, no general differences between MACOS and non-MACOS classes, on the average, in what they thought was important about social studies, or why they should study it. The prevailing opinions had to do either with an immediate personal advantage ("because it's interesting to know") or a personal long-term advantage ("so if you are ever in a country, you'll know how to act," or "so we can tell our children"). * Relatively few students mentioned scholastic necessity as a reason. Social studies educators may call the personal advantage reasons "appreciations." The term that struck us was "consumerism." Consumerism in this context means when students gave a reason for the importance of studying social studies, they tended to cite examples having the following characteristics: it is interesting to know now, and it may be useful to know some day, either personally or for informing one's children.

Despite the competing influences of television, books, movies and increased travel opportunities, we were convinced from interviews with students, that many (though of course not all) found subjects presented to them inherently interesting, no matter what the subject. Authenticity seemed important, whether it concerned Greek myths, or Netsilik boat-making procedures. Currentness also was important to many students. For example, some students, on reflection five months following a course, would state matters in terms of connections with current life or events ("almost nobody stops you on the street to ask you, for example, about the (Netsilik) or the (Micmac Indians)"). ** Such students appeared to want to be abreast of what was currently newsworthy or seemingly relevant to their lives. Schools, however, could compete with other sources of information with many fifth and sixth grade students in terms of engaging interest and attention in virtually any subject.

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* Not literal quotations.

** Again, not direct quotations, but the gist of some statements.

Analysis of interview data showed that in MACOS and non-MACOS groups alike, social studies had an influence particularly on television viewing. MACOS classes were far more likely to pay attention to animal programs (e.g., Jacques Cousteau); non-MACOS classes were far more likely to report watching historical (or contemporary) dramas that were related to what they were studying. It was television viewing, more than any other source outside school, upon which social studies in both groups (MACOS and non-MACOS) seemed to impact, according to interviews with students.

There was little evidence that social studies as seen in this study produced or attempted to produce social activism. Non-MACOS, more than MACOS courses, appeared to impel classes in this study to action. Of the two classes in the study that actually went out and tried to take concerted action based on what they had learned in social studies, both were non-MACOS classes. The precipitating issue was the problem of abandoned animals as presented by the SPCA.

Students of course did talk about social studies outside school. According to analyses of interviews conducted in November/December, two months after pretest, students in both groups were most likely to talk about social studies with parents, friends, and siblings, in that order of frequency. Surprisingly, however, the samples of students in 34% of the classes in both groups said they did not talk with their parents about social studies at all.

When students did talk about social studies, the predominant subject was, of course, what they were learning in school: facts, information, generalizations, etc. Typical discussions appeared to be descriptive, or a sharing of information. Students from both groups would also mention discussions that we classified as discussions of issues, debates, and arguments over values or opinions. Discussions of this kind were mentioned at least once in 58% of the MACOS classes and 37% of the non-MACOS classes.

Students in both groups mentioned hearing people talk about things that reminded them of what they were studying in social studies. The examples given were curriculum specific. MACOS classes were far more likely to mention animals; non-MACOS classes were far more likely to mention history, historical figures, countries, customs, etc. Somewhat more MACOS than non-MACOS classes cited news, current events, elections, politics, social issues as something they heard talked about outside school that reminded them of social studies.

Finally, students in classes from both groups often could describe doing something outside school because of what they had learned or studied in social studies. Activities included seeking further information (reading, looking at exhibits in museums); doing something that drew on knowledge or skills related to social studies (e.g., making a map for a game); or doing or seeing things initiated by others (family, scouts, etc.).

The implication of the foregoing is clear. There were many linkages perceived by students between what they studied or did in social studies in school and what they saw, and heard, and did outside school. The sense gained from students' examples and descriptions is that social studies tended typically to serve both as a supplier of information (and, to a lesser extent, skills, such as making or using maps) that enabled many students to feel that they had something to contribute to general or adult discussions or activities, and as a pointer that led students to attend to subjects, events, or details that might otherwise have passed unnoticed. The data do not allow inferences about what students made of what they learn, how they interpreted it, or what cognitive or value systems were developing.

CHARACTERISTICS OF THE TWO GROUPS OF CLASSES

We turn now to the characteristics of classes in the MACOS and non-MACOS groups. The three questions of interest in this study were: were there differences between MACOS and non-MACOS classes? to what were they related? did they have any relation to outcomes?

Initial Characteristics of Classes: Inputs

There were not significant differences between the two groups of classes, on the average, with respect to pretests of achievement or of attitudes (except for preference for social studies, as noted earlier). Nor were there differences between groups in the demographic characteristics or composition of classes. Both groups included classes covering a range of demographic compositions and sizes. The typical class in both groups, however, was predominantly white and non-low income.* The groups were similar with respect to the amount of teaching experience of teachers. There were indications of differences between the two groups of teachers with respect to educational philosophy (non-MACOS teachers tended to score higher on the average than MACOS teachers on a measure of traditionalism, but the groups were similar on a measure of progressivism),** and on the apparent importance of different broad categories of social studies objectives. MACOS teachers were more likely than non-MACOS teachers to consider a wide range of objectives as important. However, when all measures of pretest, class characteristics, and teacher characteristics were considered together, differences between the MACOS and non-MACOS groups of classes did not approach statistical significance. It was concluded that the two groups could be considered comparable at the outset with respect to the cluster of variables employed. This average similarity of groups, however, should not be taken to diminish or obscure the diversity of classes within each group.

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* The indicator of the economic status of a class used here was the percentage of students not eligible for the free lunch program.

** Traditionalism, given the items on the Educational Scale VII instrument, means a tendency to favor discipline, authority of the teacher, mastery of content, learning organized around subject matter, competitiveness. Progressivism means a tendency to favor problem-solving over content, development of good attitudes, individualization, gearing learning to students' interests and life experiences, interaction of students. In general, traditionalism here suggests

What Was Done in Classes: Processes

According to ratings made shortly after mid-year by students and by teachers, there were differences between groups in perceived emphasis on or frequency of certain kinds of activities and other characteristics (called "processes" in this study. There did not appear to be differences between groups in other activities and emphases. On the average, the MACOS classes, compared to the non-MACOS classes, were rated by students as:

- giving more emphasis to comparing things to see how they are alike or different;
- putting less emphasis on grades;

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a more authoritarian, work-oriented approach build around subject matter. Progressivism suggests a more democratic, problem-solving approach, built around life experiences, the development of positive attitudes, and individual needs and interests.

- having more emphasis on discussion
- involving more frequent talk by the teacher
- putting less emphasis on synthesizing activities (e.g., making up new things from what was learned such as stories, poems, plays, reports, etc., or thinking up new ideas or examples).

The two groups of classes did not differ significantly in perceived emphasis on:

- memory (e.g., in social studies, our teacher really makes us remember the names, new words, and facts that we have learned);
- translation (e.g., our teacher always wants us to tell about things in our own words in social studies class);
- interpretation (e.g., it isn't enough just to learn facts in social studies; our teacher also wants us to decide what the facts mean to us);
- application (e.g., the things we do and learn in social studies really help me a lot in other classes and outside school too);
- analysis (e.g., in social studies, we always have to study all the parts or sides of a question before we decide what we think);
- evaluation (e.g., in social studies, we often have to decide if things in the world are good or bad, or right or wrong, and tell why we think so).

The two groups also did not differ significantly, on the average, on ratings by students of the appropriateness of the pacing of the class (going too slowly, or too fast); of the extent of listening done; and of degree of informality or joking.

With all the ratings of process (and classroom climate) characteristics by students there were variations in ratings between students within a class. When the student ratings were averaged to produce a "score" or average for the class, there were variations among classes within the MACOS and non-MACOS groups. The similarities and differences between groups reported here refer to average similarities and differences in the average of class means for the two groups of classes as a whole.

MACOS teachers, significantly more than non-MACOS teachers as a group, rated their curriculum higher in emphasizing affective content, application, analysis, and synthesis. They rated their curriculum less in emphasis on comprehension; and similarly to non-MACOS teachers, on the whole, in emphasis on memory, evaluation, group activities, and individual activities.

The emphasis perceived by students on comparing and on discussion, and the comparative lack of emphasis on getting good grades, are three characteristics that appear consistent with MACOS design goals and philosophy. That MACOS classes, compared to non-MACOS classes, saw the teacher as talking more, and as having less emphasis on synthesis activities, are results which do not seem consistent with MACOS design goals and philosophy. To the extent that the ratings made by students were valid indicators of typical emphases or characteristics, the results suggest areas that may be of interest for teachers, supervisors and others to consider in program planning and staff development.

Direct and repeated observations of classes could have helped clarify some of these results. The limited observational data that could be obtained and analyzed are at least suggestive. A random sample of transcripts of MACOS and non-MACOS classes, taped in November/December two months after pretest, was analyzed, using the Aschner-Gallagher coding system. Only teacher statements and questions were coded. The samples were small (9 MACOS and 10 non-MACOS classes), and so the lack of statistical difference in results was not unexpected. However, the average frequencies of types of statements and questions in both groups of classes were very similar. Other than statements having to do with classroom routine, the predominant type of statement or question had to do with cognitive memory. The next most frequent type of statement or question was classified as convergent thinking -- directed toward a single answer or point. Divergent thinking and evaluative thinking questions were relatively infrequent in both groups. There was indication that cognitive memory questions were a little less frequent, and evaluative thinking questions a little more frequent in the MACOS sample than in the non-MACOS. The average number of teacher questions and statements was slightly greater in the MACOS than in the non-MACOS sample.

These results, which of course apply only to a single class period, and only to a small sample of classes in each group, nonetheless have interesting implications. One reason why there may not have been differences between students' perceptions of emphases in MACOS and non-MACOS groups of classes with respect to memory, translation, interpretation, analysis, and evaluation is that there may not have been substantial differences, on the whole. In light of the fact, however, that there were average differences between groups in classroom climate, and in perceived emphasis on grades, and on discussion, it is possible that the same types of emphases or activities were carried out differently in the two groups, and thus were reacted to differently by students. It is also possible that the content of MACOS tended to help make otherwise similar processes have a different effect on the attitudes of students towards the class.

A second implication of the results of analyses of the samples of class transcripts is related to the similarity in development of inquiry skills that seemed on the whole to characterize the two groups of classes. If underlying methods and emphases were in fact similar, on the average, it would not be surprising that, as has been seen, the development of resultant inquiry skills would be similar, and that attitudes towards ambiguity in problems or interest in problem-solving would be similar.

Results of Variations in Amount of Implementation of MACOS

How did variations in amount of implementation of MACOS (e.g., percentage of lessons taught, amount of time spent) affect outcomes? Analyses, using class means, were made of the MACOS classes for the two parts of the MACOS test (*Man and Other Animals*; *Netsilik*) at posttest, and for the *Man and Other Animals* part in the second follow-up, a year after MACOS. The results were that: 1) pretest class means on the *Man and Other Animals* sub-test was the most significant predictor of posttest performance in all three cases; 2) pretest scores on the Netsilik part of the test was not a significant predictor of performance in either sub-test at posttest, or for the sub-test used a year later; 3) the percentage of Man and Other Animals lessons taught was not a significant predictor of performance in any of the three cases; 4) the percentage of Netsilik lessons taught was a significant predictor of performance on the Netsilik sub-test at posttest; and 5) the percentage of sixth graders in a class was a predictor of performance on the Man and Other Animals sub-test, but not on the Netsilik sub-test (i. e., older students did better on the part of the test containing items dealing with some of the more abstract concepts of the course).

These results suggest that the Netsilik unit provided students with more new and readily understandable information than the Animals unit.

Suppose all posttest measures are considered simultaneously in relation to amount of implementation (with the implementation variables also considered simultaneously)? Would there be significant association? The answer is that there was a significant relationship. But the outcome variables that were most strongly associated with amount of implementation of MACOS were posttest attitude, not achievement variables.* Of the attitude outcomes at posttest, the most strongly associated was interest in problem-solving, followed, in descending order of strength of association, by preference for social studies, and attitudes towards unusual, hypothetical customs or beliefs and towards people or groups that would have such customs or beliefs. The MACOS test, the Interpretation of Data test, and the STEP had much weaker associations.** The results suggest that when posttest achievement and attitude outcomes were considered together, it was attitude outcomes rather than achievement outcomes that were the more likely to be influenced positively by increasing amounts of implementation of MACOS.

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* It should be noted that pretest measures were not included as predictors in this analysis.

** Technically, the index of association used here was the correlation of a variable with the criterion variate in a canonical correlation analysis.

Relationships Among Variables

An analysis of relationships among variables shed some light on the factors affecting learning outcomes. For instance, there were relationships between what was done in classes (processes) and certain attitudes at posttest and in follow-up. There were relationships between initial characteristics of classes (input) and what was done in class (process). The following descriptions are based on analyses using principal component "scores" for sets of variables.* A principal component is a weighted composite "score" for a group of variables. For example, all the classroom process measures based on student ratings, converted to classroom averages, were combined to produce two composite scores by a method somewhat like factor analysis. Given these two principal component score equations, each class could be assigned two "scores," one for the first principal component, the other for the second. The principal components were used to examine relationships among variables (they were also used in major analyses of differences between groups). When a principal component appeared to have a significant relationship to some other variable or variables, examination was made of the individual variables that were particularly related to the principal component. Therefore, when we mention particular variables below, it will be understood that the variables were parts of a composite score.*

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* Principal components were also used as covariates in analyses of outcomes, and in analyses of initial differences among groups.

Relations of Beginning Aptitude of Students and Attitudes of Teachers to Outcomes

Not surprisingly, beginning aptitude (pretest) was the most important factor in posttest results as far as achievement scores (class means) were concerned. Pretest score was not always the most important factor with posttest attitude scores (again, class means). In some cases posttest attitude scores were much more likely to be associated with variables such as teacher attitude, classroom processes, and classroom climate.

Teacher attitudes, as measured at pretest, were related to posttest class scores of attitudes toward unusual, hypothetical customs, beliefs or behavior, and toward tolerance of ambiguity in problems. There was also indication of a relationship of teacher attitude to performance on the MACOS test at posttest. In all these cases, the higher the traditionalism scores of the teacher, the poorer or less positive the posttest outcome score. The same relationship held for attitudes toward people who might have unusual beliefs or customs measured in the final follow-up, a year later.

Interestingly, the more focussed the teacher's objectives (the less the teacher tended to see a wide variety of objectives as equally important), the better the class scores on the MACOS test in the final follow-up, a year after the posttest. On the other hand, the more general the teacher, the more positive the class scores in the final follow-up on attitudes toward unusual customs or beliefs.

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* By way of illustration, the three classroom climate variables formed one composite "score," i.e., one principal component. Thus, reference is made to "climate" with the understanding that it is made up of the three scales already described: satisfaction, apathy, difficulty.

Thus, teacher attitudes did seem to influence results. But when relationships of student and teacher pretest characteristics to results were analyzed simultaneously in the MACOS and non-MACOS groups separately, it was the student aptitudes (pretest scores) that were by far the more important.

Classroom Climate

Classroom climate was significantly related to posttest performance on the STEP test, and on the measure of preference for social studies compared with other subjects. Climate was also significantly related to class average ratings at posttest of ability of self as problem-solver. A year later, classroom climate, measured the prior year, was significantly related to a measure of how well last year's classes now liked social studies *per se*. These relationships, however, pertained predominantly to the non-MACOS group. The invariant relationship between classroom climate and outcomes was that the better the climate, the better or more positive the outcome.

Classroom Processes (Activities and Emphases)

Composite measures of classroom process variables were significantly related to class posttest reactions to unusual, hypothetical customs, beliefs or behavior, and to persons or groups that would have such customs, beliefs or behavior. They were also significantly related to posttest attitudes of tolerance for ambiguity in problems. The following year, in October, previous classroom process measures were significantly related to opinions of classes about whether subjects or skills they had learned the year before in social studies were benefitting them in their present courses. They were also related to how interesting students from former MACOS and non-MACOS classes found their current social studies classes, compared to their previous class.

When the two groups of classes were analyzed separately, it was found that after input had been accounted for, it was the non-MACOS group of classes in which the process and classroom climate variables showed significant relationships to the outcomes described. The finding is interesting especially since it pertains primarily to attitude outcomes. It suggests that the outcomes of the MACOS classes, taken as a group, seemed to be less affected by variations in perceived classroom processes and classroom climate than outcomes of the non-MACOS classes, taken as a group. This, of course, does not apply to any specific non-MACOS class or curriculum; only to all considered together. Nor does it apply, by the same token, to any particular MACOS class; only to the MACOS classes taken as a group.

One should not conclude that classroom processes or classroom climate were of no importance at all in the outcomes of MACOS classes. For example, analyses of relationships of process and climate variables considered simultaneously suggested, for the MACOS classes, that the perception of the class as informal, without stress on grades or tests, and without emphasis on particular forms of activity such as remembering facts, putting things in your own words, always giving good reasons, and the like, were important factors in some follow-up attitude and achievement outcomes. It was also important if the teacher did not perceive the curriculum as emphasizing knowing, remembering and individual work.

The important elements in the classes in this study appeared to be 1) teachers who tended to hold traditional views of education, and who felt their curriculum emphasized basic cognitive objectives, and 2, *classes* that were perceived by students as having relatively little opportunity for discussion, little emphasis on comparing things, little emphasis on interpreting what things seem to mean, and little emphasis on evaluating (trying to decide what is right or wrong, good or bad). These combinations were apt to be related to outcomes, particularly to poorer attitude outcomes, at posttest and in follow-ups. The relationships appeared stronger in the group of non-MACOS than MACOS classes.

Factors Related to Good Classroom Climate

Suppose one regards classroom climate as an outcome? What prior factors seemed to influence it? Generally, classroom climate was related to the attitudes or orientations of teachers, and to how students perceived the emphases and activities of their classes. The *lower* teachers scored on a measure of traditionalism and on approval of controlling behavior, the better the climate. The *less* the class was perceived by students as traditional (emphasis on grades, right answers, facts, individual work), the better the climate. Classroom climate was not related to pretest achievement levels of classes. There was a relationship with pretest attitude. The more a class at the outset perceived itself as interested in problem-solving, and as creative, the less difficult the course was perceived at midyear. Classroom climate did not appear particularly related to the demographic characteristics of classes.

Relationships of Initial Characteristics of Classes to Subsequent Processes and Climate

There was indication that initial characteristics of classes were related to classroom processes (what was done, and how) and classroom climate. The relationships were somewhat different in the MACOS and non-MACOS groups. In the non-MACOS group, the better the scores of the class in achievement and attitude at pretest, and the lower the score of the teacher on traditionalism measures, the less the teacher tended to indicate that the curriculum emphasized lower order objectives (e.g., remembering, comprehension). There was some indication that classes were also perceived by students as tending to be informal, without stress on grades. There was also a strong relationship of good classroom climate to such a pattern.

In the MACOS group, the older and more affluent the class, the younger the teacher (or more specifically, the less total teaching experience), and the lower the teacher's scores on traditionalism measures, then: the more the class was perceived as informal and not stressing grades, the less it was perceived as emphasizing traditional activities, the more the teachers indicated the curriculum emphasized affective and higher-order cognitive objectives, and the better the classroom climate. Pretest achievement levels of classes bore some relationship to processes; pretest attitude measures had little or no relationship, on the whole. Again it should be remembered that these relationships in both groups pertain to the groups of classes, not to any specific class.

The interpretation offered here is that teachers who used MACOS with older, more affluent classes were better able to establish classes that were perceived by students in ways that were consistent with the 'community of learning' thrust of MACOS. Furthermore, the MACOS teachers' perceptions of emphases and activities tended to be more consistent with those of students than was the case in the non-MACOS group. The relationships were less clear in the non-MACOS group, very possibly because of the diversity of curricula. In both groups, it appeared important that the teacher not have a traditionalist attitude, certainly if good classroom climate was desired.

To summarize, there were relationships of achievement and attitude measures (outcomes), at posttest and in follow-up, to what went on in classes (processes) and to climate. The relationships of processes and classroom climate were stronger with attitude than with achievement measures. For example, attitudes of students toward social studies were more strongly related to classroom climate than were the various achievement measures. While there were differences in process and climate measures between classes within the MACOS group (as well as within the non-MACOS group), the outcomes of non-MACOS classes generally showed a stronger relationship to variations in processes and climate than the MACOS classes. The attitude or orientation of the teacher was important in both groups. Lower traditionalism scores went along with more positive perceptions and attitudes by students. There was indication that the same types of emphases and class activities were apt to be perceived differently (and more positively) in the MACOS classes than in the non-MACOS classes.

TEACHERS

Demographic Characteristics

As groups, the MACOS and non-MACOS teachers were similar (according to data provided by them on a background form) in a number of characteristics, although the MACOS group had more male teachers (47%) than the non-MACOS group (35%). All but three teachers were white. One teacher in each group was black, and one MACOS teacher was oriental. The median age of the MACOS teachers was 29, of the non-MACOS teachers, 28. Six percent of the MACOS teachers were over 50; 10% of the non-MACOS teachers were. Thirteen percent of the MACOS teachers, and 24% of the non-MACOS teachers, identified with an ethnic minority. Seventy-six percent of the MACOS teachers and 67% of the non-MACOS teachers held Bachelor's degrees; 9% of MACOS and 12% of non-MACOS teachers held a Master of Arts in Teaching; 19% of MACOS and 18% of non-MACOS teachers held other master's degrees.

MACOS teachers had an average of 9 years teaching experience (range: 0-33); non-MACOS teachers had an average of 10 years experience (range: 1-40). Both groups had taught in their present school districts an average of 6-7 years. Both groups had taught their present program an average of about 2½ years. However, the range of years' experience was much different (MACOS had only recently been developed): MACOS, 0-4; non-MACOS, 0-16.

Eighty-three percent of the MACOS teachers and 75% of the non-MACOS teachers had had a social studies methods course before becoming teachers of record. Sixty-seven percent of the MACOS teachers and 48% of the non-MACOS teachers had some form of in-service training in teaching social studies. The great majority of teachers in both groups, when interviewed in February, indicated they were neither receiving nor giving social studies related training during the year of this study.

Forty-three percent of the MACOS teachers, and 60% of the non-MACOS ones, were in self-contained classes. About 45% MACOS and 38% non-MACOS teachers were involved in team-teaching. Twenty-eight percent of the MACOS teachers and 13% non-MACOS indicated they were involved in an open-space arrangement. Fifteen percent of the MACOS teachers and 23% of the non-MACOS teachers indicated they were in a departmentalized situation.

When asked to state the one subject they most preferred to teach, 21% of the MACOS and 22% of the non-MACOS teachers said social studies. Twenty-three percent and 20% of the two groups respectively listed math or science. Twenty-eight and 30% respectively listed combinations of subjects, some of which included social studies.

Who or What Influenced Teachers Most With Respect to Teaching Social Studies?

During the second interview with teachers, teachers were asked what person or experience had had the greatest influence on their ideas about what social studies is and how to teach it. Some teachers mentioned several sources, but only the first was tallied. The most frequent source mentioned by MACOS teachers (31%) was the MACOS summer institute, workshop, or in-service training. The most frequently mentioned source by non-MACOS teachers (44%) was their own personal experience (no particular source stood out). Ten percent of the MACOS teachers and 30% of the non-MACOS teachers cited a professor or course(s) in college or graduate school. Other sources mentioned by members of both groups were: teaching a particular program (MACOS, Holt Data Bank, Taba, etc.); and team members, colleagues, other persons in the school system. A few teachers mentioned a former high school teacher. A few mentioned books they had read (e.g., Glasser's Schools Without Failure; various social studies texts and series). No teacher mentioned the professional journals, although that does not mean they did not read them or were not influenced by them.

Teachers in both groups who mentioned a source of important influence other than their own experience were likely to indicate that the influence was in the direction of more openness, with more concern for concepts and relationships than with facts and dates. In both groups, regardless of the source mentioned, the described change was often linked to ways of making subjects interesting to students, getting subjects to come alive, and getting students to see the relevance of what they were learning to themselves and to the world around them.

Problems Confronted By Teachers

Were problems faced by teachers in the two groups different? How changeable were programs in the two groups? Teachers were asked in the first interview (November/December) what they found to be the most difficult problem they had had to deal with in teaching social studies at their particular grade level. The two most frequently cited problems by MACOS and non-MACOS teachers had to do with lack of student interest (32% MACOS, 51% non-MACOS), and the wide range of abilities of students (32% MACOS, 24% non-MACOS). The first category had to do with lack of interest per se, or because students could not see the relevance of social studies to their own lives, or with lack of interest because the materials, terms, concepts, etc. were too difficult or abstract. The second category included such problems as the wide range of developmental levels, maturity, work skills, listening skills, ability to participate in discussions, ability to work together in small groups, and the like. Other less frequently mentioned problems by teachers in both groups were: reading and writing skills, discipline, quantity or quality of available materials, lack of continuity of program at earlier grade levels, low priority given to social studies, and lack of clear social studies goals. Both groups also mentioned problems not as readily categorized as the above.

The most prevalent solution offered by both groups of teachers focussed on the quality of the program (simpler, more interesting materials; more field trips; more tie-ins to the needs and interests of students).

Overall, there appeared to be little difference in the kinds of problems teachers from either group described as particularly difficult. Some teachers, of course, said they could think of no particularly difficult problem.

Non-MACOS teachers, somewhat more than MACOS teachers, were likely to have made what they considered important changes in their programs from the preceding year. And non-MACOS teachers, much more than MACOS teachers, were likely to have changed or modified their present program by November/December from what they had planned at the beginning (59%, compared to 33%). The kinds of changes and the reasons for making them, however, were generally similar in both groups, if changes were made at all.

When interviewed the second time (February/March), the majority of teachers in both groups were very pleased with how their programs were going. A number of teachers in both groups, however, said they were behind where they had hoped to be by that time. A few teachers in both groups mentioned the lack of adequate time for social studies as the problem. Several MACOS teachers felt the Man and Other Animals unit was too long, and a few teachers felt the course was not providing sufficient opportunities for students to develop basic study skills, or map and geography skills. MACOS teachers were a little more likely than non-MACOS teachers to mention problems with group discussions, or with getting adequate student involvement in group processes. Two MACOS teachers had dropped the course due to lack of student response. Non-MACOS teachers were more likely than MACOS teachers to mention problems with availability of suitable materials.

In sum, teachers teaching MACOS in whole or in part were, by definition, working with a different teaching situation from teachers teaching the variety of other programs called non-MACOS in this study. According to their descriptions, however, they found themselves dealing with instructional problems no different, on the whole, from the non-MACOS teachers. They were less likely, as a group, to have made changes in their programs, according to what was said about changes by both groups in interviews. When they did make changes in their programs, it was for reasons similar to those of other teachers: response to students' needs; changes in school personnel or organization; breakdown or unavailability of equipment, other reasons. As noted before, variation in implementation and adaptation was a striking feature of the MACOS program in this study. Considering the much greater percentage of non-MACOS teachers reporting changes they had made or were making in their plans, the same condition of variation and adaptation was obviously the case for many of the non-MACOS programs as well.

Linkages, Communications, and Continuities: School Contexts

Were there differences between MACOS and non-MACOS courses in their relationships to the rest of the school program? Several aspects of interrelationships in schools were explored through interviews with teachers.

The great majority of teachers (76-87%) in both groups believed that the attitude and skills goals that they described for their social studies programs were being reinforced in other parts of the school program. Teachers in self-contained classes indicated that they tried to reinforce attitude and skills goals in other subjects they taught. Various courses or programs mentioned by teachers (not just in self-contained classes) as reinforcing the same attitudes and skills in varying degrees included art, reading, spelling, language arts, math, science, Magic Circle, Inside-Out, physical education, and having older students work with younger students. Approximately 45% of the teachers in both groups felt that other parts of the school program were apt to cover, at least in some respects, the same concepts, knowledge or other content as the social studies program. Descriptions of similarities of content, however, tended to be restricted and lacking in specificity.

There were variations from school to school, or class to class, in the degree and specificity of overlap of social studies and other parts of the school program with respect to goals concerned with attitudes, skills, and (especially) content. Nevertheless, there was sufficient indication of overlap described by teachers to suggest that evaluations of particular social studies classes and programs need to take seriously the overall school context.

Nearly all teachers in both groups said, at posttest, that they had discussed their social studies program during the year with another teacher (or teachers). Predominantly, the intercommunications of teachers in both groups about social studies were with teachers at the same grade levels (fifth and sixth grades). There was some interaction with teachers at lower grade levels; relatively few teachers said they had talked about social studies with seventh or eighth grade teachers, who, for the schools in this study, were in separate, junior high school buildings. The conclusion drawn here is that the prevailing patterns of communications among teachers about social studies in both groups were among teachers at the same grade levels. That pattern undoubtedly had implications for the continuity and cumulative effects of social studies instruction, although it was beyond the scope of this study to attempt to trace them.

Teachers' perceptions of similarities and differences of social studies programs in lower and higher grades to their own program were sought in posttest interviews. Teachers were asked about the similarities and differences of their present students' program, compared to what those students had had the prior two years or would face in the next two years in social studies. Twenty-five percent of the MACOS teachers, and 18% of the non-MACOS teachers said they really did not know of, or could not think of, similarities with what their students had done in the past. Eighteen and 11% of the teachers in the two respective groups did not know of, or could not think of, differences. Thirty-one percent of the MACOS teachers, and 40% of the non-MACOS teachers did not know of, or could not think of, similarities or differences between what their students were doing now in social studies, and what those students would be doing in the next two years. Not surprisingly, sixth grade teachers were more likely to say they did not know than fifth grade teachers, since the sixth grade students would be going to another school. In some cases, fifth grade teachers could not comment because they knew there was going to be a different program the following year, but it was not yet final.

The predominant difference in students' past programs cited by teachers was subject matter; the same was true also for future differences cited. With respect to past and future differences in programs, MACOS teachers were more likely than non-MACOS teachers to mention a different teaching approach or strategy. Other past and future similarities and differences cited by teachers in both groups included same (or different) textbook or series, skills, and focus on attitudes. Generally, descriptions of these tended to be broad and impressionistic.

Another channel of linkage and intercommunications of social studies comes through principals, and social studies supervisors, or other instructional supervisors, directors or resource persons. Most MACOS teachers (60%), at posttest, said the principal had observed the class at least once during the year; 49% of the non-MACOS teachers also said their classes had been observed by the principal. Less than 20% of the teachers in both groups said their classes had been observed by anyone from central administration. The majority of teachers in both groups (62 and 68%) said they had talked with the principal about their social studies program during the year. Thirty-five percent of the MACOS teachers, and 28% of the non-MACOS teachers, said they had talked with at least one person from central administration about social studies during the year.

At least a third of the non-MACOS teachers, and nearly half the MACOS teachers interviewed at posttest indicated they had had some reaction or comments about their social studies program from parents or members of the community. Most feedback, questions, or comments came during parent/teacher conferences. Most comments or reactions described by both groups were positive. Some MACOS teachers had questions from parents stemming from critical commentaries appearing in the newspapers. In both groups, negative reactions were apt to focus on concern over students' knowledge (or lack of it) of American history (with the Bicentennial approaching).

How Teachers Felt About the Adequacy of This Study

This study will be judged by various audiences according to their interests and criteria. It is of interest to ask: what did the teachers involved in it think? They were asked at posttest, what effects the study had had on them or their students, and also whether they felt we had observed (in one form or another) the significant features or important aspects of their program. Some described positive effects (e.g., the students liked the special attention; the teacher gave more thought to what he or she was trying to do in social studies). Some described negative effects (e.g., the students hated the tests; the teacher found the forms unduly time-consuming; scheduling was time-consuming; tests and interviews cut into class time). Some cited both positive and negative effects. Some (20-30%) said they could think of no effects, positive or negative.

Non-MACOS teachers, far more than MACOS teachers (69%, compared to 43%), felt the study had picked up, in one form or another, the significant or important aspects of their program during the year. Those teachers in both groups who felt the study missed significant or important aspects described them in similar terms. The descriptions seemed principally to fall into three main categories. First, some teachers felt we missed general classroom interactions, exciting discussions, unpredictable but indicative exchanges between students or statements that were made, and the like. In effect, they felt we missed significant discussions and classroom interactions. Second, some teachers cited particular things done, such as certain projects, events, plays, international festivals, games, class court or government. Finally, some teachers simply noted that we did not really observe the class at all. Those teachers often indicated they had in mind observations and evaluations of how they conducted lessons, and handled problems.

The comments made by those teachers were quite literally correct. With the exception of one class period, the features described were not observed directly. We learned of many of the aspects or features they described, but from secondary sources: students, and the teachers themselves. It is nevertheless hoped that teachers and others will find what was learned useful, as it is summarized here and described in detail in the full report.

CONCLUDING REMARKS

The preceding summary has included interpretations and conclusions throughout wherever those appeared warranted. They have been stated with reference to designated topics. Rather than list them again, we believe a few concluding remarks, reflecting our own overall conclusions, are appropriate. These remarks do not cover all points made or implied in the foregoing summary. They are intended to encapsulate what seemed to us to be salient results and implications of the study.

MACOS clearly interested a large number and variety of students. It was also clear that they learned and remembered much that they otherwise would not have learned. The factual content of the course, and the materials, were often mentioned by students, after the course, as something they missed. MACOS classes were more likely than non-MACOS classes to find their next year's social studies class less interesting, by comparison.

It was also clear that most MACOS teachers in the study liked the program. Some had problems with it with the particular classes they found themselves teaching, but the overall impression given was very positive. Teachers typically, in this study, felt free to supplement it with other lessons, units or programs. Indeed, variation in use of MACOS was the prevailing adaptation.

The results of this study, however, suggest that the course was more effective with older students (in this case, with sixth graders, compared to fifth graders). The overall results also seemed more modest than the designers might have hoped. The course has broad goals that of course are difficult to define and measure precisely. By the methods employed in this study, we found no systematic advantage of MACOS, compared to the non-MACOS group of classes, in the development of inquiry skills, in the development of interest in open-ended problems (a tolerance for ambiguity), in interest in problem-solving, or in increased confidence in ability to solve problems. All of these may have occurred with individuals. We failed to find evidence of them in the group of classes as a whole.

MACOS classes, on the average, did tend to stimulate significantly more positive reactions than non-MACOS classes, on the average, to unusual, hypothetical customs, beliefs or behavior, though not towards people or groups that might have such customs, beliefs or behavior. If responses to questions on a pencil and paper instrument are at all indicative of social attitudes, MACOS, as implemented in the classes in this study did seem to have a positive, but temporary, effect. More positive attitudes were associated with greater amounts of implementation of the curriculum.

MACOS did seem to support a form of pedagogy consistent with the designers' intentions. It did so more effectively, on the average, with older, more affluent classes (that is, classes with lower percentages of low-income children). We found it interesting, however, that overall, the outcomes of MACOS classes, particularly attitude outcomes at the end of the course and subsequently the following year, were less sensitive or related to how students viewed the course and how it was implemented than in the non-MACOS classes. With respect to attitudes particularly, but also achievement, MACOS appeared to provide more leeway for a range of teacher attitudes and teaching strategies than the non-MACOS group of courses, taken as a whole. But in both groups, the data of this study suggested that variations in the attitudes of teachers, and in classroom emphases and activities had a greater impact on attitudes of students than on achievement. In this context, it was of interest to note in the MACOS group of classes that when achievement and attitude outcomes were considered together, it was attitudes more than achievement that were affected by increasing amounts of implementation.

A final comment concerns reactions of students to vivid or disturbing material, issues or other content. Both MACOS and non-MACOS groups of classes read about, saw, and discussed topics or situations that were vivid and which evoked strong reactions in students, more so in fifth than sixth graders. It appeared from the data of this study that what was particularly likely to evoke strong reactions was whatever appeared to be cruel, exploitative or unfair. Students could understand unusual customs or preferences, and even see reasons for them. MACOS students were apt to react strongly, at least at first, to the Netsiliks' eating preferences and habits. But it was their treatment of animals, and the way animals were killed, that students were likely to disapprove. Social studies, perhaps more than other subject areas, may tap important issues and evoke strong reactions, at least temporarily. That happened in both groups of classes in this study.

I. PURPOSE AND BACKGROUND OF THIS STUDY[1]

A. Purpose

The study reported here is an inquiry into the uses and results of Man: A Course of Study (hereafter called MACOS or sometimes just M), a one year social studies program originally designed for application at the upper elementary level.[2] The study is restricted to 5th and 6th grade (or equivalent non-graded) classes in public schools.

In most general terms, the study is an investigation of three questions:

1. What do students who take MACOS learn?
2. What do they retain?
3. Is what MACOS students learn different from what non-MACOS students learn?

These broad questions were, of course, narrowed with respect to variables and time periods. Nevertheless, the approach of the study has constantly been to try to obtain as broad a scope as possible and feasible.

The essential method has been comparative. Classes of students at the same grade levels, which were in the same school districts and which were in social studies programs other than MACOS, have served as the comparison. This group of classes will hereafter be called non-MACOS (or sometimes simply NM). The group is a congeries of programs including Holt Data Bank;

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[1] This study was conducted under National Science Foundation Grant No. SED 72-06289 A04

[2] Published by Curriculum Development Associates, Inc., Washington D.C. 20036. MACOS was developed by the Education Development Center, Cambridge, Mass., 02138, principally under grants from the National Science Foundation.

Harcourt, Brace, Jovanovich; Allyn and Bacon; Silver Burdett; et. al, as well as occasional teacher-made programs.

The comparative method has a decisive operational meaning in this study: all forms, questions and procedures applied to MACOS classes were applied equally to non-MACOS ones. The method has important strengths, but also inherent constraints and limitations.

While the essential aims of the study have not changed over the three years of its conduct, the conceptualization of it has undergone modification and, it is thought,clarification. The project has always been concerned about the fidelity of a course, the correspondence between the intentions of the designer and the practice of the implementer. The actors and forces impinging on the classroom- students, teachers, parents, administrators, norms, expectations, schedules, etc., - exert powerful influences on that correspondence, at least in the social studies. The study is thus in part an inquiry into the question: if one is going to teach MACOS, what are some of the things one may expect under various conditions? And how do they compare to what might be done otherwise? As a corrollary, the study has attempted by three different methods to determine what seems to have been done in classrooms, to obtain information about the content and methods of implementation. Thus the study has sought, within the limits of resources, to examine to the extent possible, processes as well as outcomes.

The aims of the study have been to delineate similarities and differences. As described in the Section II, it involved following over a hundred classes during the academic year 1974-75, and then doing two follow-ups with samples of students from each class in October and May of the 1975-76 academic year. While the ostensible focus has been on MACOS, this study has to keep in mind and explore larger issues pertinent to upper elementary social studies.

B. Background

During the development of MACOS, an extensive formative evaluation was done by Hanley, et. al., as part of the development process.[3] This study used teachers and classes participating in field tests of the curriculum. Hanley's study essentially involved measures and observations of MACOS students and classes in different types of school districts. Some non-MACOS comparison classes were observed, and comparisons were made of tests of children in MACOS and non-MACOS classes. The study was primarily absolute in form, however. It concentrated on gains made and interview information provided by students and teachers in the pilot MACOS classes.

Subsequent to Hanley's study, and at the time the curriculum was being prepared for commercial distribution, a small field investigation was conducted by Cort.[4] The purpose was to investigate alternative approaches to further evaluation of MACOS by examining the conditions of utilization of the curriculum in selected schools and districts served by EDC-supported Regional Centers. Some of the tentative findings of that study were that: 1) different teachers[5] had different goals for the course; 2) many teachers thought they could teach the same skills and attitudes with other materials; 3) many teachers saw content primarily as a vehicle for stimulating inquiry processes and felt that process was the important element; 4) many teachers felt puzzled about how to evaluate results, or at least how to communicate their assessments of progress; 5) the course may not be appropriate for all teachers, or for all students; 6) the primary criterion of effectiveness in teachers' views was the extent to which students became interested and involved; and 7) the main criterion of failure of the course, in teachers' views, was if it were taught in a traditional, didactic, lecture fashion, with emphasis on facts. The study also expressed concern that the teachers involved in MACOS theretofore were carefully selected, or self-selected, and were not necessarily typical of the broad upper elementary spectrum. The principal conclusion of the study was that any further evaluation of MACOS should by systematically comparative, and should be longitudinal, extending beyond the duration of the course.

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[3] Janet P. Hanley, Dean K. Whitla, Eunice W. Moo and Arlene S. Walter, Curiosity/Competence/Community: An Evaluation of Man: A Course of Study. Social Studies Curriculum Program, Educational Development Center., Cambridge, Mass., 02138, Vols. I and II, 1970.

[4] Cort, H. Russel, Jr., Naomi H. Henderson and Cheryl Jones, Approaches to Further Evaluation of Man: A Course of Study. Education Studies Department, The Washington School of Psychiatry, Washington, D.C., 20009, 1971, under NSF Grant No. W005707.

The curriculum had attracted much attention almost from its inception as one of the more elaborate of the federally funded social studies curriculum projects of the 1960's. It provided an opportunity, eventually, for Jerome Bruner to guide the translation of pedagogical theory into curriculum design. It marked a dramatic entry of the behavioral and social sciences into the social studies area at the elementary level. It also early on provoked opposition from various individuals and groups concerned with issues of evolution, sex education, displacement of American history from the 5th grade curriculum, and invasion of privacy. Such opposition has continued, as will be noted below.

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[5] Fifty one teachers, 16 principals, 15 administrators or curriculum directors in 24 school districts were interviewed, as well as 6 MACOS Regional Center Directors. Some but not all classes were observed.

MACOS was reviewed by Sanders and Tanck in Social Education in 1970.[6] Bumstead reported critical impressions of it in Educate.[7] It was analyzed for the Social Science Education Consortium by application of the Consortium's Curriculum Materials Analysis System. Jones devoted attention to analysis of it in his book, Fantasy and Feeling in Education.[8] The Eastern Regional Institute for Education (ERIE), in Syracuse, New York did a number of studies aimed at identifying factors affecting the dissemination and effective installation of process curricula, including MACOS. Deffenbaugh, et. al., investigated instruments for measuring teacher attitudes and behaviors.[9] Calvert reported improvements in students' attitudes toward social studies when MACOS was introduced.[10] By 1974, Eisner and Vallance used MACOS as a test case for application of their concepts of fivecurriculum orientations.[11] And also by 1974, Social Education devoted a special section to MACOS, including an annotated

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6. Sanders, Norris M., and Tanck, Marlin L., A Critical appraisal of twenty-six national social studies projects. Social Education, Vol. 34, No. 4, April, 1970. See also an evaluation in Social Education, Vol. 36, No. 7, November 1972, pgs. 742-744.

7. Bumstead, Richard A., Man: A Course of Study, Educate, Vol. 3 No. 4, September 1970, pgs. 20-29.

8. Richard M. Jones, Fantasy and Feeling in Education. New York: Harper and Row, Inc., 1970.

9. Deffenbaugh, Sue A., et. al., An Investigation of an Instrument Battery Related to the Expectancies for Student-Centered Teaching Behavior in Man: A Course of Study. Final Report. ERIE, July, 1970.

10. Calvert, John F. Change in Student Perceptions of the "Social Studies" Following the Introduction of MACOS. ERIE, November 1, 1970.

11. Eisner, Elliot W., and Vallance, Elizabeth, (Eds.), Conflicting Conceptions of Curriculum. Berkley: McCutchan, 1974.

bibliography.[12] The curriculum also provided opportunities for graduate research and doctoral dissertations. Youngers, for example, studied types of questions asked in samples of MACOS and non-MACOS classes.[13] An ERIC search conducted in 1976 revealed several other subsequent MACOS studies.

There have of course been other social studies curriculum development of major proportions currently with MACOS, and there have been formative evaluations on the scope approaching that of the Education Development Center. An early instance of the latter was the study of the Taba curriculum for grades 1-8.[14] MACOS, however, has continued to generate more general interest and controversy than other curricula, although that generalization does not always hold in particular locations and time periods.

In the late spring of 1972, Antioch College was given a grant by the National Science Foundation to plan a longitudinal study of MACOS. This eventuated in a proposal for a four year study of MACOS and non-MACOS classes, that involved repeated study of the same MACOS and non-MACOS teachers over a two year period, and follow-up with samples of students, also over a two year period.

The study proposed grew out of a three day design conference held at the beginning of the planning project. A group of ten consultants, some of whom

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12. Social Education, Vol. 38, No. 5, May, 1974. pgs. 441-457.

13. Youngers, John C. A Descriptive Study of the Cognitive Emphases Expressed in Man: A Course of Study Social Studies Classes. Doctoral Dissertation, the University of Rochester, New York. 1972. Also, Arends, Richard J., A Summative Evaluation of Man: A Course of Study: A Study of its Human Effects. Doctoral Dissertation, University of Oregon, December, 1972.

14. Wallen, Norman E., et. al., Development of a Comprehensive Curriculum Model for Social Studies for Grades One Through Eight Inclusive of procedures for Implementation and Dissemination.

were specialists in social studies curriculum and teaching, others with evaluation and measurement expertise, met with project staff to thrash out issues, purposes, objectives and methods. There were strong conflicting views expressed and debated. Questions were raised over whether one should even expect any effects of a single course over several years; over whether measured learning outcomes should even be the focus (characteristics of classroom activities were considered more crucial); over what the real goals of MACOS were and how they could be operationalized for purposes of measurement; over what information would be of use to whom; over whether or not to impose a set of standards (for outcomes, for teaching processes) and measure MACOS against those standards; over the role of parents and how to include them in the study; over what constitutes an impact on and change in the education process and system, and so on. A beginning was made at defining process and outcome variables, and recommendations were made for particular instruments and procedures.

The resultant proposed design was a compromise of necessity. It was an attempt to strike a balance between conflicting positions and purposes. In some cases, strong recommendations were rejected. For example, the recommendation to include as part of the project a genuine experiment, with random assignment of teachers to curricula was ultimately rejected as unfeasible on a large enough scale.

The proposed study was submitted to the NSF in the late fall of 1972. Funding problems arose and the project lay dormant for over a year. The

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San Francisco State College, Final Report, Project No. 5-1314, Grant No. OE-6-10-182, October, 1969 (ERIC ED-040-106).

NSF did have the proposal reviewed and made reviewers criticisms known to the project co-directors. In the Fall of 1973, the NSF requested a revised plan, scale down to fit specified budgetary limitations.[15] This revised plan, which will be described in Section II, was funded in December, 1973 and started in January, 1974. Further modifications in design were made as the study proceeded (as will also be described).

Subsequent to the start of this study, MACOS continued to be embroiled in controversy. Weber wrote a critical commentary on MACOS in the Phi Delta Kappan of October 1975, with response from Peter Dow, Senior Associate of the Social Studies Program, Education Development Center.[16] That same month, Dow also had an article in Social Education paired with one by Congressman John B. Conlon that summarized the Congressman's reasons for opposing the curriculum and his concerns about the national development, marketing and dissemination with use of tax dollars.

Earlier in the spring of 1975, MACOS had become a central stimulus in a debate in Congress over NSF funding that resulted in a termination of further implementation grants for MACOS by the NSF. James J. Kilpatrick had several nationally syndicated columns on MACOS.[17] Various newspapers and magazines reported on the debate in Congress. The Chronicle of Higher Education, and the APA Monitor of the American Psychological Association ran articles on the controversy.[18] The General Accounting Office did an investigation of MACOS and NSF administration of the program. The NSF conducted a high level, internal staff review of the curriculum, and Congress had a panel investigate it. The National Council for the Social Studies published a position statement on MACOS and the broader issues of the federal role in curriculum development and implementation.[19] The MACOS controversies were considered by the Curriculum Development Task Force of the National Institute of Education.[20]

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[15] In submitting the larger proposals, several options for reducing the scope of the project had been suggested.

[16] George Weber, The Case Against Man: A Course of Study. Phi Delta Kappan, October 1975. Also Peter B. Dow, MACOS: The Study of Human Behavior as One Road to Survival.

[17] The Washington Star, March 1, and March 24, 1975; also January 20, 1976.

These controversies over MACOS, which centered around the appropriateness of its content for 10-12 year olds, teaching sympathy for lurid and gory customs, setting up severe moral dilemmas in students and reducing or alienating their belief in the values of their parents and their communities, promoting and marketing a curriculum with taxpayers money, and unfair competition with private publishers, still continue although with less play in news media. During the course of this study there have been attempts to test hypotheses based on these educational concerns and apprehensions. In effect, the study has also attempted to investigate questions arising over the effects of MACOS content on students.

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18. Philip M. Boffey, "Social Science Curriculum Under Fire in Congress," The Chronicle of Higher Education, March 31, 1975; Karen Schaar, MACOS Assailed: Congress Debates Curriculum," and "MACOS: the Controversy Continues," APA Monitor, Vol. 6, Nos. 6 and 7, June and July, 1975.

19. The MACOS Question: Views of "Man: A Course of Study" and the Roles of the National Science Foundation and the Federal Government in Curriculum Development and Implementation. A Statement of the National Council for the Social Studies, June 20, 1975.

20. Current Issues, Problems and Concerns in Curriculum Development. A Report and Set of Recommendations Submitted to the National Council on Educational Research in Responding to NCER Resolution 091875-19-3. The NIE Curriculum Development Task Force, NIE, January, 15, 1976.

II. DESIGN OF THE STUDY

A. Initial Design of the Study

1. Sample design goals

An underlying assumption of this study has been that the classroom was the primary unit of analysis, and the design was therefore based on classes, not students. It is a stringent but reasonable assumption, made to afford the necessary independence of units by eliminating the correlation of scores within a class. The initial goal was to have 72 MACOS and 72 non-MACOS classes, distributed equally in 6 districts within each of 4 major geographical regions. Within each region, the aim was to have 2 districts of each of three types: urban, suburban, rural.[1]

For reasons of cost and administrative feasibility as well as research design, there were criteria for inclusion or exclusion of classes in the study.

> . MACOS was originally designed as a program for upper elementary students (grade 5 and 6). For that reason it was decided to restrict the study to classes at those grade levels.
>
> The question of what would constitute an appropriate group of comparison (non-MACOS) classes had been considered extensively. A number of alternative possibilities had been considered. It was believed that the most meaningful property a comparison group of classes in a non-experimental study was related to the question: what do MACOS students do and learn in social studies compared to what they otherwise would have done and learned? It was further believed that the closest approxi-

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[1] The measure of this sociological variable employed was the U.S. Office of Education's Metropolitan Status Code, a 3 level classification consisting of Metropolitan, Central (1); Metropolitan, Other (2); and Non-Metropolitan (3). For definitions, see Statistics of Local Public School Systems, Finance, 1972-73. National Center for Educational Statistics, NCES 76-156, U.S.O.E., D.H.E.W., Washington, D.C., 1976, pgs. 2-3.

mation to that, holding as many educational and community background variables constant as possible, was to obtain non-MACOS classes in the same school districts from which MACOS classes were drawn. The school district is the administrative and policy making unit of schools within it, and it is the focal point of of overall community interests and influences on local education. It was therefore decided to restrict comparison classes to schools within the same districts as the MACOS classes if possible. That decision led to the requirement that a district would not be included if there were no schools with alternative 5th or 6th grade social studies programs in the district. However, pending the results of a survey of districts, it was decided that if the requirement could not be met, a fallback position would be to match MACOS and non-MACOS districts on demographic criteria and to draw comparison classes from alternative districts.

. It was decided that since public schools were the major market for (and area of concern of the community about) MACOS, only public school classes would be included in the study.

. Situations in which MACOS was to be taught over more than one academic year (e.g., the Man and Other Animals section in the spring, the Netsilik section the following fall) were excluded in order to retain as much comparability of implementation of MACOS as possible.

. Another criterion resulted from the question of whether non-MACOS classes should be drawn from the same schools as the MACOS classes. There were valid conceptual reasons for taking that approach if an orthogonal design could be carried out. For any pair of classes (MACOS, non-MACOS), it would minimize the extraneous effects of variations between schools and school enrollment areas. To not do so would eliminate the possibility of analyzing directly effects of and on MACOS related to school characteristics. There were, however, countervailing considerations. It was considered desirable to avoid the implication of a competition between MACOS and other social studies programs within a building. It was also believed that it would be undesirable to have to eliminate schools where only one 5th or 6th grade class could be obtained. Furthermore, it was believed that participation by teachers in the study should be voluntary and that it would be undesirable to restrict the design only to cases in which there were at least two teachers, MACOS and non-MACOS in the same building who were willing to participate. On technical grounds, if an orthogonal design within schools could not be maintained uniformly, then it was desirable to maintain independence of classes to the extent possible. It was therefore decided to draw non-MACOS classes from different schools than the MACOS classes if possible. That decision perforce eliminated districts with just one elementary school, although it did not eventually result in just one class per building.

. Classes in districts requiring travel beyond the boundaries of the continental United States (e.g., Alaska, Hawaii, Puerto Rico, Virgin Islands, American Samoa) were excluded to minimize travel costs.

Sampling was not intended to be representative of public schools districts of the United States because MACOS was not, in 1972 and 1973, distributed randomly. Predominant utilization in 1972 was in districts ranging in size from 1,000-24,000 students. Utilization also was not proportionately distributed in states within regions or among regions. It was used predominantly in districts in the North Atlantic and Western states.[2]

2. Obtaining districts and classes

In February, 1974, a brief questionnaire was sent to all public school superintendents, along with a short summary of the intended project (see Appendix J). A return addressed pre-paid envelope was included. The questionnaire essentially asked:

. whether MACOS was to be used as the primary social studies curriculum in grades 5 and/or 6 in the 1974-75 academic year;

. in how many schools, by how many teachers; approximate percentage of classes at 5th, 6th and 5/6 levels;

. whether the district was interested in considering participation in the proposed study;

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[2] Those are regional classifications used by the U.S. Office of Education.

. some characteristics of classes at the upper elementary level (self contained, departmentalized, etc.);

. some demographic characteristics of the district.

The questionnaire went to approximately 16,500 superintendents. Return rate was 12% which appears low. However, over 25% of the districts then using MACOS at the 5th or 6th grade level responded. Responding districts were sorted into districts that intended to use MACOS at 5th or 6th grade and were willing to consider participation (102 districts) and districts that were not going to use it but were willing to consider participating (607 districts). The districts in both groups were classified according to Metropolitan Status Code, based on U.S.O.E. lists. Concurrently, 419 districts in which MACOS was being used at any grade level obtained from a list provided by the publisher. Curriculum Development Associates (CDA), were similarly classified.

The list of responding and interested MACOS districts paralleled the list of CDA sales districts on both characteristics and diverged from the responding, interested non-MACOS districts on both variables, as shown in Table II-1.

Table II-1: Percentage Distributions of Districts

a. Classification by U.S.O.E. Regions

	North Atlantic	Great Lakes	South East	West	Total	N
1. MACOS	37.3%	18.6%	10.8%	33.3%	100%	102
2. CDA List	47.3	18.1	8.8	25.8	100	419
3. Non-MACOS	24.9	44.5	9.6	21.1	100.1	607

b. Classification by Metropolitan Status Code

	Metropolitan Central	Metropolitan Other	Non-Metropolitan	Total	N
1. MACOS	11.8%	52.9%	53.3%	100%	102
2. CDA List	13.4	54.7	32.0	100.1	419
3. Non-MACOS	10.1	28.7	61.3	100.1	607

*Numbers may not add to 100% due to rounding errors.

Districts in the MACOS group were then screened according to criteria described above, with a resultant 57 districts meeting them. From that pool, 27 districts filled the region-by-metropolitan-status matrix, and also met the following criteria, based on expected use of MACOS:

- . at least one school at 5th grade level and at least one school at 6th grade level, or
- . 2 or more schools with non-graded 5-6th grade classes, or
- . 5-6th non-graded classes in one school with at least 2 or more teachers.

Based on these results, it was believed that adherence to the plan of obtaining comparison classes within the same districts was feasible. However, attrition was expected. A replacement plan was to draw on a random basis from remaining districts matched by region and metropolitan status code or, by metropolitan status code if there were no remaining districts in the region.

Districts were contacted, starting with the 27 that filled the region by metropolitan status design. This process started in late April, 1974. It was the start of a series of negotiations, delays, defaults and false starts that in fact lasted until a week before pre-testing was scheduled. A number of districts dropped out when the social studies coordinator or other person designated by the school as the contact for the study formally sought approval from the Superintendent, the Research Review Committee or other formal authorizing body. Some were dropped when, upon talking with the coordinator, it was discovered that MACOS was to be taught in two half year-parts, one in 1974-75, the other the following year. In a few cases districts declined to participate when they found the project was not going to provide them with MACOS sets, or teacher training, or both. In a few big city cases the district declined finally because of concern about the additional testing burden on students already subject to much testing required by federal programs such as ESEA Title I. By the opening of schools, the project had firm, written commitments from 16 districts, one of which dropped out after pre-testing, giving 15 districts.

Although the original aim had been to obtain classes in 24 districts meeting geographical and demographic requirements, the number of most concern was the number of classes. A minimum feasible level of 50 MACOS and 50 non-MACOS classes had been set. The rationale underlying those sample sizes was that a minimum measure of the comparative effect of MACOS would be a covariance analysis of a dependent variable, with group (MACOS, non-MACOS) as the independent variable, and pre-test, class size, a measure of socio-economic status, and a measure of age or grade level as the covariates. It was considered that the power of such a test should be at least .7. It was also thought that an effect size of .25 was realistic. In Cohen's suggested guidelines, that is a medium effect size for a simple analysis of variance, and is comparable to about 6% of the total variance of the combined groups accounted for by group membership.[3] Assuming a significance level of .05, sample sizes of 50 classes in each group would be necessary to meet those requirements. Such a conceptualization assumes that samples are drawn or assigned on a random basis, and that they are statistically independent. It was believed, however, that it was a defensible basis for setting minimal sample requirements for proceding with the study on the following grounds. The ultimate aim of the study was to observe MACOS classes, and non-MACOS classes, in a variety of contexts, geographically, educationally, and demographically. Although the district was considered an important administrative social and educational unit (and was certainly the necessary point of access to schools and classes), it was believed that the classroom was the critical locus of instructional effects.

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[3] Cohen, Jacob, Statistical Power Analysis for the Behavioral Sciences. New York: Academic Press, 1969. See Ch. 8, F tests on means in the Analysis of Variance and Covariance.

The issue of independence of units obviously extends to the school building. If classes nested in districts may be correlated, classes nested in schools also have to be considered correlated. It would have been optimal either to have had 2 or more MACOS classes per school building and two or more non-MACOS classes per building, or only one class of either kind in any one building. Either requirement would have forced the exclusion of situations (specifically, districts) that, it was believed, provided a variety of different settings for the implementation of MACOS. Effort was made to obtain MACOS and non-MACOS classes in separate buildings to the maximum extent possible. However, considerations of different conditions of implementation, as well as feasibility and cost, were also of importance. Thus the ultimate criteria adhered to were that:

- the MACOS and non-MACOS classes must be at the 5th or 6th grade level or a non-graded equivalent;
- there should be a minimum of 2 MACOS and 2 non-MACOS classes per district;

- there must be at least 50 MACOS and 50 non-MACOS classes;
- MACOS was intended to be the primary social studies curriculum;
- MACOS was not originally intended to be distributed in implementation across 2 school years.

Realities of the situation, then, forced changes in the design, although not in the ultimate focus of the study. The factorial design crossing geographic region with metropolitan status was abandonned. The design was not orthogonal with respect to schools within districts or classes within schools. There was a smaller number of districts and classes than originally planned. However, other changes were made in the measurement and observation design to strengthen the information obtained, particularly through increased interviews with students and teachers. Subsequently, main analyses treated the study as a two-group (MACOS, non-MACOS), pre-post and follow-up design, with classes as the unit of analysis. Attention was also paid to possible district and school effects and their implications.

The resultant samples were 57 MACOS and 51 non-MACOS classes distributed in 76 elementary schools, in 15 districts in 11 states (Florida, Virginia, New Jersey, Pennsylvania, Illinois, Iowa, Nebraska, Colorado, California, Oregon, and Washington). The resultant sample of 15 districts differed in regional distribution in 2 categories from the CDA list, but, more importantly, retained the Metropolitan Status distributions of MACOS utilization noted in Table II-1. The 15 districts were distributed as follows:

Regions		Metropolitan Status	
North Atlantic	13.3% (47.3)*	Metropolitan Central	13.3% (13.4)
Great Lakes	40.4 (18.1)	Metropolitan, Other	53.3 (54.7)
Southeast	23.3 (8.8)	Non-Metropolitan	33.3 (32.0)
West	33.3 (25.8)		

*Numbers in parentheses are the percentages of districts that had bought MACOS sets, according to lists obtained from the publishers in 1972 (see Table II-1)

In effect, the classes in the study came from a distribution of districts that was similar in metropolitan status to that in which MACOS was being bought. Since one might wish to generalize to groups that seemed likely to try MACOS, that similarity of distributions was considered particularly important. More detailed descriptive information of the characteristics of districts, schools, classes and teachers is given in Section IIIB and in Appendix B.

3. Selection of Schools and Classes

In most cases, there was little or no choice in schools and teachers for selection of MACOS classes. The main choice was in non-MACOS schools and classes, and in some districts there was no choice with respect to schools because there were only two alternative schools. In negotiating with district coordinators, a form was provided on which the following data for elementary schools were requested on a school by school basis:

- number of MACOS and non-MACOS teachers at 5th, 6th and 5-6 non-graded levels
- average reading achievement scores for 3rd and 6th grade levels
- percentage of students eligible for free lunch program

- percentage of minority students
- percentage of bi-lingual students

In cases in which those data were made available prior to the start of school in September, 1974, and in which there was a choice, comparison classes (schools) were picked from those that most closely matched MACOS classes (schools) with respect to reading achievement and socio-economic characteristics (using percentages of students eligible for free lunch as a measure). In cases in which the district coordinator[4] picked comparison schools (the great majority of cases) they were matched, typically, on the basis of student population characteristics (socio-economic and racial composition). In one case the comparison was picked because it was the only other school in the district matching on the basis of organization of the school.

Teachers were selected either by the district coordinator or by the school principal. Participation was intended to be voluntary, although it eventually became clear (in interviews with teachers) that some teachers felt pressured into participating, or had misunderstood, or had been misled about the purpose and scope of the study. It was also clear that in a number of cases, coordinators approached principals or teachers they felt would be most likely to cooperate, and principals did the same. All communications by the project with teachers prior to pre-testing was through the district coordinator.

In part because of the non-random selection of schools and teachers, the following data were collected:

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[4] District coordinator is our term. Actual positions in the school systems varied. Some coordinators were associate superintendents, some directors of social studies, some directors of research, some were principals, etc.

- completion of the school characteristics data described above for the schools in the project;
- an interview with the district coordinator to establish the number of elementary schools in the district, the number of schools he or she had approached; the number of schools that refused to participate; the number of teachers approached who refused to participate; which MACOS and non-MACOS schools were most closely matched, and on what bases;
- background characteristics of teachers, and several standardized attitude measures, collected from teachers;
- background characteristics of students in each class (e.g. sex, age, race, eligibility for free lunch program, whether English was the primary language for the student, years in present school, whether or not the student had previously had MACOS and students' present reading level, based on standardized tests and reported on a 5 point scale (above, at, and below grade level at time tested); these data were provided by teachers.

Analyses of MACOS and non-MACOS classes have been made using many of these variables, as will be described in Section III. As noted earlier, tables showing characteristics of classes, teachers, schools and districts will be found in Section IIIB. The essential points here are that districts, schools and (for the most part) teachers were not randomly selected. They met certain minimal criteria established by the study. Within those limits, there was self-selection of districts and within districts. It was believed, however, that the classes in the study would provide a broad range of student, teacher and environmental conditions under which the implementation of MACOS and non-MACOS courses could be observed.

It should be noted that students also were self selected in some cases.

The school district was responsible for allowing access to students. In a few cases, parents did not want or allow their children to be involved. In administering instruments to students, students who did not want to do them were not pressured to do so; similarly students who did not want to participate in interviews were not pressured to do that either. Students were always told that their teachers would not see the results of the forms they were doing, or the remarks they made in interviews, and that nothing would go in their school record or affect their grades.

As a final comment on selection process, it should be noted that the project did not at any time attempt to seek non-MACOS programs that might be considered strong competing programs with MACOS. The project did not, for example, attempt systematically to obtain Taba programs, or Holt Data Bank, programs, etc. A variety of alternate programs do occur in the group of non-MACOS classes. That is not by systematic design, and no attempt to analyze specific non-MACOS programs is made in this report.

B. Measurement Design

This subsection describes the measurement design, variables and instruments.

1. Design

There were six measurement, or data collection, periods for all classes, MACOS and non-MACOS, as shown in Table II-2.

Table II- 2 : Measurement Design and Dates

Pretest	Midtest 1	Midtest 2	Posttest	Follow-up 1	Follow-up 2
. Pretest Students . Data Collection from Teachers . Data Collection from District Coordinators	. Tape Class . Interview Students . Interview Teachers	. Process/ Climate Questionnaire for Students . Program Characteristics Form for Teachers . Interview Students . Interview Teachers	. Posttest Students . Interview Students . Interview Teachers	. Questionnaire for Students . Interview Students (50% sample from each class from prior year)	. Questionnaire for Students (50% sample from each class from prior year; same sample as Follow-up up-1 to extent possible)
Sept/Oct 1974	Nov/Dec 1974	Feb/Mar 1975	Apr/May 1975	October 1975	May 1976

Pretest, midtest 1 and midtest 2 each covered 3 weeks. Posttesting lasted 3 1/2 weeks. Follow up 1 and 2 extended for 2 weeks each. With a few exceptions, the sequence of scheduling of districts was the same for pre and posttesting. Thus, pre-post intervals were the same for most classes, and within a two week range for all classes.

2. Variables and Instruments

Variables, instruments, data sources, and time period of administration or data collection are listed in Table II- 3 . A more detailed discussion of instruments, with appropriate author credits and citations, is given below. A copy of each instrument except for the STEP test, is in Appendix A . No alternate forms of instruments were used for pre-post or follow-up testing. One instrument (Study Choices, Number 2, in Table II-3) was modified for Follow-up 2 to

Table II-3
Instruments, Variables, Data Sources and When Administered[1]

Instrument	Variables	Data Source	When Given
1. STEP-Social Studies Series II, Form 4A	Organizing, interpreting and evaluating information, with items drawn from different disciplines, such as history, geography, sociology, anthropology.	All Students	Pretest, Posttest
2. Study Choices (SS Ch)	Attitude toward social studies in relation to other subjects (SS Ch)	All Students	Pretest, Posttest, Follow-up 2
3. What Would You Think (WW)	. Attitude toward unusual hypothetical beliefs or customs(WWA) . Attitude toward people who would have those beliefs or customs (WWB)	All Students	Pretest, Posttest. Follow-up 2
4. Interpretation of Data Test (IDT)	. Ability to make logically defensible inferences (deductions) from ethnographic data.	Students Set A ½ of each class selected on random basis	Pretest, Posttest
5. Children's Attitude Toward Problem Solving Inventory (CAPS)	. Attitude toward undertaking to solve or work on problems . Attitude toward self as problem solver Note: A factor analysis was made of the instrument and 4 factors were identified: . Ability of self as problem solver (CAPS-1) . Interest in problem solving (CAPS-2) . Tolerance for ambiguity in problems (CAPS-3) . Perceived creativity of self (CAPS-4)	Students Set B The alternate random half of the class	Pretest, Posttest

1. See text for author/publisher credits, and descriptive information.

Table II Continued

Instrument	Variables	Data Source	When Given
6. A Questionnaire About Animals and People (AP)	. Understanding of certain MACOS course concepts as applied to animals studied in the course and to the Netsilik Eskimos. . Knowledge of course specific vocabulary (In Follow-up 2, only the section on vocabulary and understanding of course concepts applied to animals was used.)	Students Set B	Pretest, Posttest, Follow-up 2
7. My Social Studies Class (MSSC)	. Feeling about social studies this year, compared with last year (SS Comp) . Attitudes toward asking questions in social studies (Percep) . Preferred way of working (Alone) . Perceived amount of teacher talk (Listen) . How often the student asks questions (Quest) . Attitude toward pacing of class (Speed) . Perceived emphasis of social studies class on: Memory (Mem) Translation (Trans) Interpretation (Interp) Application (Appln) Analysis (Anal) Synthesis (Synth) Evaluation (Eval) Opportunity for Discussion and Involvement (ODI)	All Students	Midtest 2

Table II-3 Continued

Instrument	Variables	Data Source	When Given
	Test/Grade Stress (Stress) Comparing (Comp) Informality (Joking) Liking Class (Like) Teacher Talk (T Talk) Initiative (Init) Diversity (Div) . Perceptions of 3 climate characteristics: Satisfaction Apathy Difficulty		
8. My Social Studies Class, This Year and Last (MSSC YL)	. Perceived emphasis of present social studies class on : Memory (Mem 1) Interpretation (Interp 1) Synthesis (Synth 1) Evaluation (Eval 1) Opportunity for Discussion and Involvement (ODI 1) Test/Grade Stress (Stress 1) Teacher Talk (T Talk 1) Divergence (Div 1) Liking Class (Like 1) Comparing (Comp 1) Initiative (Init 1) . Feeling about social studies class this year compared with last year (SS Comp. 1) . Perception of amount of change (Change 1) . Interest in class this year compared with last year (Interest 1) . Perception of differences in amounts of specific learning activities this year compared with last year (Act. 1)	Students: a 50% random sample of students from each class from preceding year	Follow-up 1

Table II-3 Continued

Instrument	Variables	Data Source	When Given
	. Perceptions of advantages of skills and knowledge from last year in this year's class (know ; skills) . Opinions about gory or emotional topics studied last year (Emot 1) . Opinions about suitability of such topics for 5th and 6th graders (Opin 1)		
9. Social Studies Survey (SSS)	. Attitude toward social studies in relation to other subjects (SS Ch F) . Perception of emphases in present social studies class on: Interpretation (Interp 2) Synthesis (Syth 2) Evaluation (Eval 2) Discussion/Involvement (ODI 2) Test/Grade Stress (Stress 2) Liking Class (Like 2) . How much students like social studies, English, science, math, each rated separately (SS) . Perceived amount of teacher talk (Listen 2) . Attitude toward pacing of class (Speed 2) . Recommendation of last year's class (Recom) . Perceived change from last year (Change 2) . Perception of differences in amounts of specific activities this year compared with last year (Act 2)	Students: a 50% random sample from each class from preceding year. To the extent possible, the same students as in Follow up-1 with replacements on random basis.	Follow-up 2

Table II-3 Continued

Instruments	Variables	Data Source	When Given
	. Opinions about gory or emotional topics studied last year (Emot 2) . Opinions about suitability of such topics for 5th or 6th graders (Opin 2) . Attitudes toward unusual hypothetical beliefs or customs (WWAF) . Attitudes toward people who would have those beliefs or customs (WWBF) . Attitude toward certain social behavior of a hypothetical peer (WWAPF) . Attitude toward person having that behavior (WWBPF) . Knowledge of MACOS course concepts applied to animals, and of course specific vocabulary (AP1-4FU)		
10. Student Master Roster and Background Form A (MRA)	. Student Name . Which pre-post test group, A or B (Project use only) . Which mid-year group, A or B (not used) . Age in months . Sex . Race . English as a second language	Teacher	Pretest (beginning of year for most items, with update during year)

Table II-3 Continued

Instruments	Variables	Data Source	When Given
	. Primary language . Eligibility for free lunch program . Number of years in present school . Month joined social studies class . Month withdrew (not used)		
11. Student Master Roster and Background Form B (MRB)	Teacher's ratings of students: . general academic ability . participation in class discussions . interest in social studies . mastery and understanding of social studies course concepts . general reading level (based on test scores) . how often student applies what he/she studies	Teacher	Posttest
12. Teacher Master Form Record	. Teacher background information . Pre-service and in-service training	Teacher	Pretest
13. Educational Scale VII (ES VII)	. Attitudes toward educational practices and values: . Traditionalism (Trad) . Progressivism (Prog)		

Table II-3 Continued

Instrument	Variables	Data Source	When Given
14. Teachers at Work scale (TAW)	. Assessment of teacher behavior (TAW)	Teacher	Pretest
15. Program Survey (PS)	. Classification of own program with respect to six broad goals or orientations . Characterization of own concept of social studies . Ranking of influence on teaching of different orientations . Ratings of relative importance of a variety of instructional objectives	Teacher	Pretest
16. Verbs for Objectives (VO)	. Selection of verbs best characterizing own objectives for the year	Teacher	Pretest
17. Program characteristics	. Frequency with which social studies class has done different activities . Two most popular activities . Time characteristics of social studies . Ratings of emphases of curriculum	Teacher	Midtest 2
18A. MACOS Course Checklist	. Units and lessons taught . Time spent on Unit . Materials used . Use of homework assignments . Years taught MACOS	Teacher	Posttest

Table II-3 Continued

Instruments	Variables	Data Source	When Given
18B. Supplement for classes that had MACOS and other programs	. Text . Units and lessons covered . Time spent on units . Supplementary programs	Teacher	Posttest
18C. Social Studies Course Checklist (for non-MACOS classes)	. Text . Units and lessons covered . Time spent on units . Concurrent or supplementary programs or texts . Use of homework assignments . Years taught present program	Teacher	Posttest
19. District Coordinators Form	. Characteristics of district re: social studies curriculum	District Coordinator	Pretest or during first semester, 1974-75
20. Cost Survey	. Costs of MACOS and other social studies programs at same grade level in district	District Coordinator	Follow-up 2

be suitable to 7th grade as well as 6th by dropping two subjects, reading and spelling.

Interviews with students and with teachers had objectives and variables that sometimes complemented and sometimes supplemented the variables listed in Table II-3 . Purposes of each set of interviews are given in Section V of this report, along with a detailed report of the results of the interviews.

The instruments listed in Table II-3 will be discussed next in the order in which they appear in the table. The purposes of the discussion are to: 1)provide proper acknowledgement and 2) give additional information that may help the reader understand what the study attempted to measure, how and why.

a. STEP Series II, Social Studies, Form 4a (STEP)

This test is published by the Educational Testing Service, Princeton, New Jersey, 1969. It is 50 item, time limited test. The pretest with this instrument was administered by teachers. Posttesting with the STEP was done by Antioch project staff members.

The STEP test has norms and converted scores prepared by ETS. In this study, only raw scores were used as measures, both for the total test and analyses of sub-tests. Sub-tests are based on an item classification made by ETS under the following headings[5]:

Organizing information (6 items)

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[5] Handbook for STEP Series II, Educational Testing Service, Princeton, New Jersey, 1971, Table 24.1, p. 118.

Interpreting Information (25 items)

Assess Adequacy of Data (5 items)

Draw Inferences and Make Generalizations (11 items)

Reach Conclusions Based on Evaluations (3 items)

b. Study Choices (SS Ch)

This instrument consists of 15 items based on the method of pair comparisons.[6] Each of 6 subjects (social studies, arithmetic, science, English, reading, and spelling) is paired with each other subject. The student is asked in each pair to pick that one which he or she likes the most.

The instrument was used in this study to obtain a measure of preference for social studies,relative to other subjects. The measure used was the number of times social studies was chosen, which could range from 0-5.

Study Choices was included as part of the battery employed in Follow-up 2 (a year after posttesting). For that application reading and spelling were deleted as subjects because junior high schools (7th grade) do not as a rule count reading and spelling as separate subjects. The number of pairs, then, in Follow-up 2 was 6; the number of times social studies could be chosen as preferred was 0-3. To distinguish the instrument in Follow-up 2, it is referred to as SS Ch F.

c. What Would You Think (WWA, WWB)

This instrument was developed for this study. It was intended to address an avowed goal of MACOS: "to awaken in children an awareness of the fact that what we regard as acceptable behavior is a product of our culture."[7] The formative evaluators saw this as the issue of ethnocentrism, and elaborated as follows:

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[6] Herman, Wayne L., et. al., The relationship of teacher centered activities and student centered activities to achievement and interest in 18 fifth grade social studies classes. AERJ, Vol. VI, No. 2 March 1969, pps. 227-239.

> "where the basic similarities in human behavior have been grasped, children demonstrate verbally, that the /Netsilik/ unit is having positive effect in creating a sense of the family of man. Do children go beyond the easy correlation of similarity, however, and begin to understand and sometime enjoy the diversity of human behavior?"[8]

The formative evaluators of MACOS used semantic differential scales in an effort to assess this global concept and found relatively small pre-post changes.[9] The evaluators also found, in their 1968-69 studies, that two true-false questions concerning attributes common and unique to all human beings gave results indicating lack of ability of 10-12 year old students to understand abstract generalizations put in the form of written statements. In their words, "...the abstract, general statements do not elicit an understanding response ...."[10]

A search for other-age-appropriate instruments for measuring ethnocentrism, or, conversely understanding the diversity (and commonalities) of human behavior was made with unsatisfactory results. A MACOS teacher provided a clue to how to conceptualize the variables of this broadly articulated goal. She noted that by the end of the year, she would not expect students to want to eat fish eyes. She would, however, hope that students could see reasons for the Netsilik doing so. She seemed, in effect, to distinguish attitudes toward an act (or belief) from attitudes toward or understanding of the actors.

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[7] Hanley, Janet P., et. al., Curiosity/Competence/Community. An Evaluation of Man: A Course of Study. Education Development Center, Inc., Cambridge, Mass., Vol. I, 1970, pp. I-59 and 60.

[8] Ibid., p. I-60.

[9] Ibid., p. III-52; some changes were statistically significant.

[10] Ibid., p. III-55.

A series of hypothetical unusual behaviors or beliefs was constructed. For each one, two sets of four statements each were developed. The first set (A) contained four statements about the custom or belief. They ranged from very negative or rejecting to at least neutral. Where it was possible, the range extended to positive values. The second set (B) contained statements about the person or group that would do or think such a thing. Again statements ranged from very negative or condemming to neutral or positive. Statements in each set were arranged in scrambled order with respect to intended negativeness. An example is:

> If you heard that there was a country in which people often ate grasshoppers and earthworms, what would you think? (Choose the one best answer for you in Column A, and then choose the one best for you in Column B.)

Column A

____1) Some people may eat them, but I wouldn't want to do that.

____2) I never thought that such things would be good to eat.

____3) Yuck! It makes me sick just to think of eating them.

____4) That's no different from our country where people eat many things.

Column B

____1) I guess it must notdo them any harm.

____2) I don't like people with such strange customs.

____3) They have good reasons for eating them.

____4) They sound like a backward group of people.

The instrument contained 5 such items intended to sample a range of social-geographical distance: self; an undefined group in the United States; an undefined group in the western hemisphere; an undefined group outside the western hemisphere; and an undefined group with no specified geographic location (the example given above).

The three criteria employed in pilot testing the instrument with samples of students at the 5th and 6th grade levels were that: 1) all choices should be picked by at least some students; 2) there should not be one choice in a set picked by 67% or more of the students; and 3) the vocabulary had to be understandable to students who varied widely in reading levels. Students were interviewed after administration of the form and asked about words that they were unsure of. Tabulations of responses made by groups of students were examined. Where initial results showed that one or more of those criteria were not being met, the choices (and wording) were revised and the instrument tried with another group of students until the criteria were met. Students each time were also asked for their suggestions about choices, and also what they thought was the difference between choices in column A and column B. Some students were not able to describe a difference. Some students would indicate that the first column A had to do with what you thought about something, while column B had to do with what you thought about why people would do it. The fact that at least some students could articulate that distinction was taken as supporting evidence of construct validity.

A score or value for each statement in a set (A or B) for each item was developed by having samples of 5th and 6th grade students in the Washington, D.C.

area rank order the four statements in a set from most negative to most positive. Students were taught how to rank order choices; all situations and choices were read aloud to minimize the problem of reading. One hundred and one (101) students, from classes covering a range of racial and socio-economic compositions did the original rankings. The procedure was repeated in 1976 when two additional items were added for use in Follow-up 2. The second group (225 students) covered the same grade, racial and socio-economic characteristics as the first group. For the original and later groups separately, the statements in each set for each item were scaled by Guildford's method based on the assumption of a composite standard (with each set, A or B, for each item, not across sets or items).[11] A linear transformation of scale values for each set of statements was made to a scale with a mean of 5 and a standard deviation of 2. Comparisons of the transformed values of the two groups showed no important differences. Therefore each corresponding value for the two groups were combined into a weighted average.

Transformed scores were rounded to the nearest whole number. This occasionally yielded ties between statements within a set with respect to the score assigned. For example, for the item given above the scores assigned to statements in each set were as follows (the lower the number, the more negative the statement):

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11. Guildford, J. P., Psychometric Methods, Second Edition. New York: Mc Graw Hill, 1954. See Ch. 8, The Method of Rank Order; esp. pp. 186-188.

Column A		Column B	
Statement	Score	Statement	Score
1	5	1	6
2	5	2	3
3	2	3	7
4	7	4	4

Responses on the instrument made by students in the present study were scored according to the weights thus derived. A total score for responses to column A statements was computed to provide a measure of attitudes toward unusual acts or beliefs (WWA). The total score for responses to column B statements were intended to measure attitudes toward people who would do or believe such things (WWB). The range of possible values on both scales is 12 to 37, or when treated as an average, 2.4-7.4

The scale values for two additional items intended to measure attitudes toward behavior by a 5th or 6th grade peer were based on ranking orderings by the same procedure as described above.

d. Interpretation of Data Test (IDT)

This instrument was developed as part of the Taba Curriculum Development Project.[12] It presents students with a map showing remains of a site once occupied by a group of people. Symbols and numbers identify where different artifacts were found when the site was discovered. Drawings and descriptions of artifacts are provided. The original instrument contained 26 multiple choice questions, such as:

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[12] Wallen, Norman E., et. al., The Taba Curriculum Development Project in Social Studies: Development of a Comprehensive Curriculum Model for Social Studies for Grades One Through Eight Inclusive of Procedures for Implementation and Dissemination. Final Report, Project No. 5-1314, Grant No. OE-6-10-182. San Francisco Cal., Oct., 1969 (ERIC ED-040106). Used with permission of Dr. Wallen.

Object number 5 was most likely in this example:

1. a horn
2. a telescope
3. used to carry arrows
4. a musical instrument
5. used to carry goods to market

The objects shown in the diagram and map might mean that the people who lived there probably engaged primarily in:

1. farming
2. ranching
3. trading
4. hunting
5. gathering
6. hunting and gathering
7. farming and trading
8. hunting and trading
9. none of these

For this study, two items having to do primarily with map reading skills were dropped to reduce administration time.[13] One other item was not included in the scoring. Thus, IDT in this study contains 23 of the original 26 items. The range of possible scores is 0-23.

The rationale for its inclusion in the study was that it appeared to tap skills important in MACOS as well as many other upper elementary social studies programs. A MACOS instrumental or pedagogical objective is: "to help youngsters to develop the ability to use a variety of first-hand sources as evidence from which to develop hypotheses and draw conclusions."[14] The IDT was chosen as one means of assessing that objective.

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[13] It was assumed that these skills were adequately covered in the STEP test.

The instrument was administered pre to a random 50% sample of students in each class (called Set A in Table II- 3), and post to the same students.

e. Children's Attitudes Toward Problem Solving Inventory (CAPS)

This instrument, developed by Dr. Martin L. Covington, University of California, Berkeley,was his revision of the earlier CAPS described in Johnson and Bommarito, [15] and was used in this study with permission of the author. It contains 33 items which are rated by students on a 5-point scale, ranging from strongly agree to strongly disagree. One item was not used in scoring the instrument.

The instrument was selected for use in this study as one means of assessing a major thrust of MACOS: developing personal self confidence. The course is designed to facilitate interactive learning. It emphasizes encouragement of opinion-giving, reflecting, listening, exploring ideas and hunches. It aims to "legitimize the search; that is to give sanction and support to open-ended discussions where definitive answers to many questions are not found."[16] CAPS is intended to assess attitudes toward problemsolving and toward self as a problem solver. It was hypothesized that MACOS should have positive effects on such

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14. Hanely, Janet P., et. al., Op. cit., p. 1-5.

15. Johnson, Orval G., and Bommarito , James W., Tests and Measurements in Child Development: A Handbook. San Francisco: Jossey-Bass, Inc. 1971. See page 436: A Child Attitude Inventory for Problem Solving (CAPS) Richard S. Crutchfield and Martin L. Covington, authors.

16. Hanley, Janet P., et. al., Op. cit., p. 1-5.

attitudes. CAPS was therefore included in the assessment battery used in this study.

The instrument can provide a total score, and Covington provided the project with the key to scoring two sub-sets of items intended to measure the attitudes stated above. The Antioch project, in addition, did a factor analysis of the CAPS, using the pre-test sample of students. Based on listwise deletion,[17] the analysis was carried out on the responses of 927 students. Four interpretable factors were identified. These are described below. Subsequently in this report they will be called CAPS 1, CAPS 2, CAPS 3, and CAPS 4.

CAPS 1: Perceived ability of self as a problem solver (5 items)

Illustrative items:

- I often make up my mind too quickly about the answer to a problem.
- When I'm trying to solve a problem, I often don't know how to get started on it.
- Most of the students in my class are better at solving problems than I am.

(the more the student disagrees with these statements, the higher the score.)

CAPS 2: Interest in problem solving (6 items)

Illustrative items:

- When I don't understand something in class, I am very ready to ask questions about it.
- I am eager to learn.
- I like to work on problems like mysteries and puzzles that make me think

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[17] A test was not included if there were one or more missing items or invalidly answered items.

(the more the student agrees with the statements, the higher the score.)

CAPS 3: Tolerance for ambiguity in problems (9 items)

Illustrative items:

. I would usually rather work on problems I know I can solve than on ones that may be too hard for me.

. I don't like the kinds of problems that have more than one right answer.

. When you are working on a problem, it is best to keep away from "wild" ideas because they may throw you off the right track.

(the more the student disagrees with the statements, the higher the score.)

CAPS 4: Perception of self as creative (7 items)

Illustrative items:

. I am able to get unusual ideas - ideas that other students don't often think of.

. I have the makings of a really creative thinker.

. I like the kinds of problems that nobody really knows the answer to.

(the more the student agrees with the statement, the higher the score.)

CAPS was administered pre and post to the half of the class (Set B) that did not take the IDT.

f. A Questionnaire About Animals and People (AP)

This instrument consists of items used in the MACOS formative evaluation, and subsequently included as Content Questionnaires I and II in the MACOS Evaluation Strategies.[18]

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[18] MACOS: Evaluation Strategies. Education Development Center, Inc., Cambridge, Mass., 1970. Disseminated and produced by Curriculum Development Associates, Inc., Suite 414, 1211 Connecticut Ave., N.W. Washington, D.C. 20036. Permission to use items was given by EDC and and CDA.

An analysis of items was done for the Antioch project by Dr. Henry Walbesser, then the Director of the Bureau of Education Research and Field Services, College of Education, University of Maryland. Items were classified as acceptable or unacceptable for the purposes of this study. An item was considered unacceptable if: 1) pretest results suggested that a 90% knowledge level already existed in the learner population; or 2) the content of the item appeared to make the response set difficult to interpret; or 3) the response set did not yield data that could be scaled.

Items were selected from the set classified as acceptable. Instructions and response formats were modified for several items. In the case of one item, 4 sub-items were added that were not in the original item. The instrument used in this study contained 4 items, with multiple parts, pertaining to the Man and Other Animals unit of the course (AP1-4), and 4 items, also with multiple parts, pertaining to the Netsilik unit (AP5-8). Three scores were obtained: a total score, and a score for each of the two main units.[19] The range of possible total scores was 0-45; for AP1-4, 0-24; for AP5-8, 0-21.

AP was administered pre and post to one half of the students (Set B) in each class, the same group that also did CAPS. AP1-4 was included in the instrument used a year after the course was over, in Follow-up 2.

g. My Social Studies Class (MSSC)

This instrument has 3 parts. The first part contains 6 items about attitudes and preferences in social studies. Five of the 6 items were modifications of items used in the MACOS formative evaluation study.[20] The other was a modification of an item in Steele's Classroom Activities Questionnaire (CAQ).[21]

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[19] For the reasons described, the scores obtained in this study cannot be compared with the scores and norms provided in Evaluation Strategies.

Part II of MSSC contains items taken from the CAQ and modified, after extensive pilotting, to make them intelligible to 5th and 6th grade students. The CAQ contains 27 items intended to measure 5 dimensions of instructional climate, as perceived by students:

1. Emphasis on lower thought processes - 3 scales based on Bloom's Taxonomy; 2 items per scale.
2. Emphasis on higher thought processes - 4 scales based on Bloom's Taxonomy; 2 items per scale.
3. Perceived classroom focus on active or passive roles of teacher and student in information giving.
4. Perceived classroom climate - how relaxed the class is.
5. Student opinions on qualities and deficiencies of the class.

The CAQ is not intended for use with students below the 6th grade. Pilot tests made by this project indicated that both 5th and 6th grade students often had difficulty understanding some of the items. Further pilot testing was done with revised wording of items. Major criteria for acceptance were consistency of responses to item pairs forming a scale, differentiation of classes on scales, and ability of students interviewed after doing the instrument to give appropriate explanations or examples of what selected items meant to them. The items particularly in need of rewording for younger students were those related to different

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20 . Joe M. Steele, Classroom Activities Questionnaire. Copyright, 1969. This instrument was modified for use in this project with permission of the author.

21 . From material provided by Steele.

levels of class activities according to Bloom's taxonomy.

The modification of the CAQ used in the present instrument consists of 25 items. The response format used was Agree (=1) or Don't Agree (=3) instead of the 5 point scale in the CAQ. Scales based on pairs of items therefore have values of 2, 4, or 6, with 2 and 6 indicating perfect consistency after necessary polarity reversals are made.

Part III of the MSSC consists of 25 items forming 3 classroom climate scales:

Satisfaction (9 items)
Apathy (7 items)
Difficulty (9 items)

The Satisfaction and Difficulty scales come from Anderson and Walberg's My Class instrument.[22] The Apathy scale is from Anderson and Walberg's Learning Environment Inventory (LEI).[23]

Items were modified in some instances to include the words "social studies" since extensive pilot testing of these and other scales had convinced the project that unless young children (5th and 6th graders) were constantly reminded that statements were intended to refer specifically to the social studies class, they would often respond with some other class in mind. The response format used for the item was, again, Agree (=1) or Don't Agree (=3), with the necessary reversals of polarity made to accumulate item scores into a scale.

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[22] My Class was developed by Gary J. Anderson and Herbert J. Walberg at Harvard University, May 1968.

[23] For information on the LEI and My Class, see Anderson, Gary J. The Assessment of Learning Environments: A Manual for the Learning Environment Inventory and the My Class Inventory. Atlantic Institute of Education, Halifax, Nova Scotia, Canada, February, 1971.

My Social Studies Class (MSSC) was administered to all students in each class in February/March, 1975 (midtest-2). The instrument was read aloud to students by the person administering it to minimize variance arising from variations in reading ability among students.

h. My Social Studies Class, This Year and Last (MSSCYL)

This instrument was administered in the first follow-up (Follow-up 1) to a random sample of 50% of the students of each class studied during the pre-post year. As with the MSSC, this instrument was administered to groups by having the tester read the questionnaire aloud.

MSSCYL contained some classroom process and climate items from the MSSC. The major part of it contained items and rating scales designed to assess:

- differences in social studies class this year, compared with last year;
- extent to which students believed what they had learned last year was advantageous to them this year;
- students' present reactions to a variety of emotionally charged topics that may have been studied the previous year in social studies.

i. Social Studies Survey (SSS)

This was the final instrument administered to students. It was given in the final follow-up (Follow-up 2) to the 50% sample of students from Follow-up 1, with random replacement when necessary to maintain sample sizes.

The instrument contained items from the MSSC and MSSCYL. These were read aloud to students. It also contained the modified Study Choices (SS Ch F)

What Would You Think (WW), and the animals section (AP1-4) of the Questionnaire About Animals and People. These were administered in the same way that had been done in pre and posttesting. That is, instructions were read to students, but items were not.

j. Student and teacher background information

(Instruments 10, 11, and 12 in Table II-3) were designed by the project and are self explanatory.

k. Educational Scale VII (ES VII) and Teachers at Work (TAW)

ES VII and TAW were instruments completed by teachers at the beginning of the project (pretest).[24] The forms were not administered but were completed by the teacher at his or her convenience.

The purpose of the instruments in this project was to provide a set of attitude variables with respect to teachers, using standardized instruments, that would help answer the question of whether there were systematic differences between the MACOS and non-MACOS teachers in the study. It was also of interest to assess possible relationships between teacher attitude, course characteristics, and outcomes within the two groups.

The ES VII is a 30 item instrument using 7 point rating scales to produce a summated score on 15 traditionalist items and a score on 15 progressivism items. The TAW consists of 6 episodes involving an interaction between a teacher and students. The respondent is asked to evaluate the teacher's behavior in each episode by making a rating on a six point scale ranging from Very Poor to Excellent. "In each episode, the teacher exhibits some or all of the following behaviors: manipulates the students, encourages destructive criticism, intra-group aggression, competition, confession and the like."[25] The more the respondent rates the behavior described as poor, the lower the score on the TAW.

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[24] Education Scale VII was developed by Fred N. Kerlinger and Elazar J. Pedhazur. See Kerlinger, Fred N., and Pedhazur, Elazar J., Attitudes and Perceptions of Desirable Traits and Behaviors of Teachers. Final Report, September, 1967, New York University, Project No. 5-0330, Contract No. OE 5-10-024, United States Department of Health, Education and Welfare. TAW was developed by Pedhazur. See Pedhazur, Elazar J., Pseudoprogressivism and Assessment of Teacher Behavior, Educational and Psychological Measurement, Vol. 29, No. 2, Summer 1969, 377-386.

1. Social Studies Program Survey (PS)

This instrument, developed by this project, was intended to assess major orientations or views of teachers about social studies. It was completed by teachers at the beginning of the project (pretest).

Part I described what appeared from a review of literature to be major orientations or goals of social studies. Teachers were asked a series of questions about their opinions of these goals, including whether they believed the aims of their own program were adequately described by one or more of the goals.

Part II consisted of 40 objectives intended to be appropriate to the major orientations or goals described in Part I, plus two general categories of objectives. The teachers was asked to rate each objective by applying the following sentence and scale:

> "If I had to choose only from this list to pick instructional objectives for my social studies program this year, I would consider this objective to be:

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[25] Pedhazur, Elazar J., op. cit., p. 381.

1. essential
2. important, but not essential
3. desirable to achieve if possible, but of secondary importance
4. has some positive value, if all else is achieved
5. irrelevant or inappropriate to what should be accomplished in or by my social studies program.

Illustrative objectives are:

.develop the ability to expect, recognize and adapt to social change.

.develop library research skills.

.develop an appreciation for the diversity in human behavior, beliefs and customs

.develop knowledge of facts and concepts that are basic to understanding our cultural heritage

.develop the ability to judge the validity of evidence and draw sound conclusion from data

.develop skills in analyzing social issues

.develop an awareness of the similarities in different cultures.

For purposes of analysis, item scores for each category were cumulated and converted to a scale ranging from 1 to 5.

m. Verbs for Objectives (VO)

This instrument was designed by this project as one means of assessing the interest of teachers in application of learning in social studies. It consists of a list of 30 verbs. Instructions were to imagine writing terminal performance objectives for the course and to pick the 6 verbs most likely to be used in formulating those objectives. Examples were given of how terminal performance objectives could be stated. It was administered in the pretest period.

The list of verbs had been prepared from a list of 80 that had been rated by 17 upper elementary social studies teachers on a 7 point scale ranging from 1 (almost certainly application emphasis) to 7 (almost certainly acquisition of knowledge and skill emphasis). The middle value was 4 (neither one nor the other, or could be either). Nine verbs were rated 1, 2, or 3 by 60% or more of the teachers. Of these, 6 were chosen on a random basis. Six verbs which the most teachers rated 5-7 were included. The other 18 were chosen at random from the remaining list.

Scoring was done by making a count of how many of the six high-rated application verbs were selected.[26] The six application verbs were: defend, design, interact, invent, share and use. Verbs that had tended to be rated as emphasizing acquisition of knowledge or skills as major goal were: analyze, define, know, recall, remember, and understand.

n. Program Characteristics Form

This instrument was intended to obtain, in Part I, information from teachers about the relative frequency of different activities in their social studies class and, in Part II, information about most popular activities. In Part III information was requested about how long and how often classes were held; also, teachers were asked to rate the affective emphasis of the curriculum and emphasis with respect to different level of Bloom's Taxonomy of Educational Objectives, Cognitive Domain.[27]

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[26] If it is assumed that choices are random, the expectation for any score can be determined from a hypergeometric probability distribution. The distribution of scores for a group can thus be tested against those expectations.

The instrument was administered to teachers in February/March 1975, midtest 2, at the same time My Social Studies Class (MSSC) was administered to students.

Part I consisted of a list of 43 activities. Each was rated on a 3 point scale of frequency of occurrence: 1-Never, 2-Occasionally (up to 6 times), 3-Frequently (very often). Items were classified by a panel of four persons with respect to specifications of Mode (primarily reading, primarily oral/aural, primarily perceptual motor, primarily observational, can't tell), and of Method (primarily individual, primarily group, can't tell). Items were grouped, on the basis of 3 out of 4 agreements on a classification, into four main sets for purposes of analysis of data:

Indiv. (Individual Activities, regardless of Mode - 9 items)

Group (Group Activities, Oral/Aural mode - 9 items)

PM (Perceptual-Motor Activities, regardless of method - 4 items)

Total Group (All Group Activities, regardless of mode -16 items)

Illustrative items for each are:

Indiv:

.Writing reports

.Writing poems or stories

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[27] Bloom, Benjamin S (ed), et. al., Taxonomy of Educational Objectives Handbook I: Cognitive Domain. New York: David McKay Co., 1956. Opinion items in Part III were adapted, with permission, from scales contained in the Curriculum Materials Assessment System (CMAS), developed by the Social Science Education Consortium, Boulder, Colorado.

. Taking teacher's tests and quizzes

Group:

. Discussing ideas and opinions of classmates

. Having social awareness group meetings (Magic Circle, Inside/Out, Sensitivity groups, etc)

. Discussing how to make a better world

PM: (Perceptual-Motor)

. Making maps

. Making charts or graphs

. Drawing pictures

Total Group (Additional Items):

. Working in small groups

. Playing social studies games

. Doing group projects

The remainder of the instruments in Table II-3 were all designed by this project. They are self-explanatory and can be seen in Appendix A.

3. Procedures

a. Assignment of students to test groups

As described earlier, the students in each class were divided into two groups, for purposes of administration of certain pre-post instruments. The basic procedure was to take the class roster, which the teacher had been asked to have available, and take every other student for one group, with the remainder going into the other group. Which group was called A and which B was determined on a random basis. For non-graded classes, two class lists were used with the same procedures applied to obtain 5th and 6th grade level representation in each group.

b. Administration of instruments

With two exceptions, all instruments were administered to students as a group by a project staff member. The major exception was the STEP pretest, which was administered by the teacher. The STEP posttest was administered to students by a project staff member. The other exception was the case of students who were absent on the day of pretesting. Teachers subsequently administered the pretest instruments to those individuals.[28]

Instruments distributed to Group A and B students in previously arranged packages were administered to the class in the following order. All students first completed Study Choices (from which the outcome measure social studies choices - SS Ch - was derived). Instructions were read and the first pair of choices were read to assure that students understood what they were to do. Five minutes were allotted for Study Choices, although the classes typically finished in 2-3 minutes. When students finished, What Would You Think (WW) instructions and the first question were then read aloud. Twelve minutes were allotted, with an extra three minutes when necessary. Then Group A students were asked to start reading to themselves the instructions for the Interpretation of Data Test (IDT) while the test administrator then read with Group B students the instructions for the Children's Attitude Towards Problem-Solving Inventory (CAPS). When Group B was started, the test administrator returned to Group A, read the instructions to students, went over the map, explained symbols and numbers, gave examples from the list of illustrations of objects, and started students on the first question. Thereafter, the test administrator answered procedural questions for both groups, but not questions of word meaning or other substantive questions. Group B proceeded to do the Questionnaire About Animals and People (AP) following completion of CAPS. Total administration time was 50-55 minutes. The vast majority of students were able to finish in that time.

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[28] A code was entered in the file on a student by student basis indicating whether an instrument was administered by the project or by the teacher.

Administration procedures for posttest were the same as for pretest. The STEP test was administered in a separate session. In Follow-up 2, some of the same instruments (or sub-parts) were repeated as part of the overall Follow-up 2 form. While all instructions and items in the rest of the Follow-up 2 questionnaire were read aloud to students, those parts repeated from pre and posttest were administered as they had previously been, with only instructions read aloud.

Other forms administered to students (midtest 2 and Follow-up 1) were read aloud *in toto* to minimize variance owing to differences in reading ability. Forms completed by teachers were, with one exception, done at the teacher's convenience (i.e. they were not administered directly by a staff member). In midtest 2, teachers were asked to complete the Program Characteristics Form while the test administrator was doing My Social Studies Class with students. The District Coordinators Form was completed at the coordinators convenience.

c. Interviews with students

Interviews were conducted with students at midtest 1 (November/December 1974), midtest 2 (February/March, 1975), posttest (April/May 1975), and Follow-up-1 (October, 1975). In midtest 1 and 2 and posttest interviews, 4 students from each class were interviewed as a group.[29] The basis of selection was random. Essentially students in Group A and in Group B were listed and then each student in a Group was assigned a sequence number from a table of random numbers. The interviewer then asked to interview the two students in each group with the lowest sequence number (01, 02, etc.). If a student was absent, or had left the class, or did not want to participate in the interview, the interviewer then picked as a replacement the student in the appropriate group with the next sequence number. In the next round of interviewing, the interviewer continued with the same lists, selecting the next four students from the remaining sequence numbers. There were cases in which the lists for a class were exhausted before completion of the three baseline year interviews. When that occurred, the interviewer recycled through the sequence numbers. There were several reasons for using this procedure. One important reason was to be able to assure students that they had not been selected on the basis of grades or performance in school or any other personal basis.[30]

Interviews were tape-recorded. Students were always assured that the interview was private, that their teacher would not hear what they said. Interviews with students and with teachers were designed to last for 20 minutes. Some ran longer, but seldom shorter.

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29. Section V of this report contains detailed descriptions of the purposes of each interview, how they were coded and results obtained.

30. It was explained to students each time that they had been chosen on a random basis: "...like drawing names out of a hat."

d. Tape recording classes

Nearly all classes in the study were tape recorded in Midtest 1 (November/December, 1974). Schedules were arranged in advance with teachers. Taping was done by the field staff member using a portable, battery operated Sony TC 110A recorder and a hand held Beyer Dynamic M 260 N(C) directional microphone. Typically, the person doing the recording sat at the side of a class near the front, moving the microphone back and forth as speakers changed. The primary objective was to record teacher statements, with as many student statements recorded intelligibly as possible. If the class broke into small groups for a time, the procedure was to sit in with one or more groups for periods of about 5-7 minutes each.

e. Assignment of field staff

Five field staff members, including the principal investigator, were assigned specific districts to be covered from pretest through Follow-up 2. The primary reason for that procedure was to enable students and teachers to become familiar with the staff member; thus rapport and continuity were the overriding considerations. For certain periods (e.g., posttest) when schedules were very tight, staff members covering proximal areas would be assigned to assist in a different district with some data gathering (e.g. administration of STEP tests). Four of the original five staff members were able to continue with the same districts from pretest through Follow-up 1. One staff member continued from posttest through Follow-up 2. For Follow-up 2, two new staff members were involved in the administration of the final questionnaire.

f. Preparation of data

Item responses for each instrument administered to students were transcribed onto data sheets by the individual responsible for test administration. ID numbers were added by the central project staff. Data were keypunched and put on tape and an edit and verification routine done for each item. Errors thus detected were reconciled by reference to the original questionnaires. Scoring of instruments was done by machine.

g. Follow-up samples and procedures

A 50% sample of students from each class was wanted for follow-up purposes. For classes with less than 13 students, all students were sought. For classes with 14 or more students who had been in the class the whole preceding school year, an approximately 50% sample was drawn from the class list, on a systematic basis, using a random start. The remainder of the students were listed in an order determined from tables of random numbers.

Ultimate criteria for inclusion of students in Follow-up 1 and 2 were:

- they had to have been in the preceding year's class all year;
- they had to be still in the same district;
- seventh grade samples (from the preceding year's 6th grade) for any given class were limited to the majority presently in no more than two different junior high schools (the same criterior was applied in a few necessary instances to the preceding year's 5th grade students).

With the assistance of district coordinators, lists were provided to principals of the primary sample of students desired, with the list of replacements, and visitation schedules were arranged. Students from a given prior class were brought together as a group. Replacements of missing students were made by going down the list of randomly ordered alternates. In Follow-up 1 the form My Social Studies Class, This Year and Last was administered by being read aloud to the group. Following that, a brief interview was conducted with the group as a whole. In Follow-up 2 the form Social Studies Survey was read aloud to the group; there was no final interview. In some cases, as noted above, the procedure called for seeing two sub-groups from a class separately. Students were not brought together from different schools. In a few cases, it was necessary to have groups composed of students from two different prior year's classes.

In Follow-up 2 effort was made to see the same students as in Follow-up 1 since it had been found in Follow-up 1 that in a number of cases it was necessary to draw substantially from replacement lists. The overlap from Follow-up 1 to Follow-up 2 was about 80%.

C. Reliabilities

1. Main Pre-Post Instruments

Generalizability coefficients were computed for the main instruments, or sub-tests within them, that were used as pre and post measures.[31] Coefficients were derived from pre-test data, and were computed for classroom means and for individual student scores. They were computed for the combined MACOS and non-MACOS groups, and or the two groups separately. The design for the computation of coefficients for class means was items crossed with students nested in classes (I x S: C); the design for student coefficients was items crossed with students (I x S).

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[31] Cronbach, Lee J., Gleser, G.C., Nanda, H., and Rajaratman, N. The Dependability of Behavioral Measurements: Theory of Generalizability for Scores and Profiles. New York: Wiley, 1972. The compute program used was GENPROG, prepared by Associate Professor Charles E. Johnson, Department of Measurement and Statistics, College of Education, University of Maryland.

Since the analysis of variance components for determining generalizability coefficients for class means requires equal sample sizes in classes, it was necessary to draw equal-sized random samples of students from classes that had more students than some acceptable minimum. Classes not meeting the minimum number for an analysis were dropped.

Table II-4 gives several coefficients for total scores or sub-scores for the six pre-post instruments, for the total group, and for MACOS and non-MACOS groups of classes separately. The first shows the pre-post correlations of class means, based on total number of classes. Column 2 gives generalizability coefficients for class means.[32] Column 3 gives generalizability coefficients for students, ignoring the nesting of students in classes.[33] Columns 4 and 5 show the number of classes and students involved in the determination of the generalizability coefficients.

Table II-4 reveals a number of points. First, the computed generalizability coefficients for class means for the CAPS sub-tests and the two *What Would You Think*

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[32] Let C = classes, I = items, S = students. The generalizability coefficient, based on the various variance components, has the following form:

$$C/(C + CI + (S, SC) + (IS, CIS, e))$$

with components CI, (S, SC), and (IS, CIS and e, confounded).

[33] This coefficient, again being a ratio of variance components, has the form:

$$S/(S + SI)$$

with SI divided by the appropriate n (in this case, the number of items).

Table II-4

Reliability Statistics of Main Pre-Post Instruments for Class Means and Students, by Total Samples, MACOS (M), and Non-MACOS (N)

Instrument	Pre-Post Correlations for Class Means			2 Generalizability Coefficients: Cl.[1]			3 Generalizability Coefficents: S[2]			4 No. of Cls			5 No. of Students		
	Total	M	N	Total	M	N	Total	M	N	Total	M	N	Total	M	N
1. Animals and People (AP)															
a. Questions 1-4 (AP 1-4)	.64	.63	.73	.46	.54	.37	.66	.68	.65	93	45	48	837	405	432
b. Questions 5-8 (AP 5-8)	.39	.39	.54	.46	.56	.33	.65	.64	.66	93	45	48	837	405	432
2. STEP Social Studies , Series II, 4A															
a. Sub-test 1: Organize Information	.86	.84	.88	.70	.67	.73	.61	.61	.61	96	48	48	1440	720	720
b. Sub-test 2: Interpret Information	.88	.90	.87	.80	.80	.80	.84	.83	.85	96	48	48	1440	720	720
c. Sub-test 3: Assess Adequacy of Data	.81	.82	.82	.62	.50	.70	.59	.56	.61	96	48	48	1440	720	720
d. Sub-test 4: Draw Inferences	.86	.87	.84	.77	.75	.79	.67	.69	.65	96	48	48	1440	720	720
e. Sub-test 5: Reach Conclusions	.72	.67	.79	.45	.34	.55	.27	.25	.29	96	48	48	1440	720	720
3. Interpretation of Data Test (IDT)	.74	.77	.72	.46	.48	.44	.54	.57	.50	95	47	48	760	376	384
4. Social Studies Choices (SS Ch)	.59	.55	.59	.71	.66	.71	.62	.62	.61	98	48	50	1470	720	750
5. What Would You Think															
a. Part A (WWA)	.42	.32	.49	.16	.27	.03	.26	.25	.27	93	46	47	1488	736	752
b. Part B (WWB)	.40	.31	.44	.18	.10	.28	.11	.07	.15	95	47	48	1425	705	720
6. CAPS															
a. CAPS- 1 (Ability)	.57	.69	.43	.00	.00	.00	.54	.51	.56	84	41	43	588	287	301
b. CAPS-2 (Interest)	.39	.45	.35	.00	.00	.00	.55	.57	.53	84	41	43	588	287	301
c. CAPS-3 (Tolerance)	.60	.54	.67	.12	.00	.29	.61	.63	.59	84	41	43	588	287	301
d. CAPS-4 (Creativity)	.52	.50	.55	.29	.37	.20	.11	.11	.12	84	41	43	588	287	301

1. Cls = Classes
2. S = Students

sub-tests are extremely low. While some of the pre-post correlations for those instruments are not high they do suggest that there may be a problem with the model used to determine the generalizability coefficients. Inspection of the relative sizes of the score components for those variables indicated that the student, and the student by classroom interaction components (S and SC, confounded) were typically the major source of variance in class means. The items by student interaction, class by item by student interaction, and error components (IS, CIS, e, confounded) were the next major contributor.

The extremely low classroom mean reliabilities did not occur for all attitude (as opposed to achievement) instruments. The class mean generalizability coefficients for Social Studies Choices (SS Ch) were quite respectable for attitude measures (see Column 2 in Table II-4). They were higher, for example, than the coefficients for the Interpretation of Data Test (IDT) and for the two sub-tests of Animals and People (AP1-4, AP5-8).

A second obvious point observable in Table II-4 is that generalizability coefficients for classroom means and for individual student scores may be quite different. The case of the CAPS factor-analyzed sub-tests demonstrates that.

Third, both pre-post class mean correlations and generalizability coefficients for the two groups (MACOS and non-MACOS) can differ, sometimes substantially.[34]

The reliability coefficients shown in Table II-4 serve to remind one of the need for prudence in interpreting results. They also, in the opinion of this project, raise questions about the meaning of reliability. The CAPS sub-tests, while not burdened with a plethora of items, nevertheless should have common factor structures within each sub-test. Yet computed class means, by the model employed (model V-B, in Cronbach, et. al.'s nomenclature), produced coefficients of zero. Given the pre-post correlations of class means, which are not trivial, one has to raise questions about the model and its assumptions. On the other hand, if one believes the model, then questions need to be raised about the defensibility of the subsequent analyses employed in this study of measures based on class means. No attempt will be made here to resolve theoretical issues of reliability according to classical psychometric theory. The basic implication of the results in Table II-4 is to impose an attitude of conservatism - in analysis as well as interpretation.[35]

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[34] No statement about significance of differences is implied.

2. Other Instruments

In Table II-4, generalizability coefficients were given for student scores for the 5 sub-tests of the STEP, Series II, Social Studies, Form 4A. The published reliability for the total test for 5th grade students is .92.[36]

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[35] It may be noted, again in anticipation, that a series of analyses of the consequences of disattenuation of pretest on the partial correlation of post test and treatment were made. Conclusions, as they are stated in this report take those analyses into account. Similarly analyses using Kenney's four models were made. Again conclusions as stated are consistent, it is believed, with the results of those analyses (cf., Kenney, David A., A quasi-experimental approach to assessing treatment effects in the nonequivalent control group design. Psychological Bulletin, 83, 3, 345-462, 1975).

[36] STEP Series II Handbook. Educational Testing Service, Princeton, New Jersey, 1971. Table 42.

That figure was derived by the Kuder-Richardson 20 formula and is thus an internal consistency measure of the total test.

Three scales from Anderson and Walberg, and from Walberg, were used in midtest 2 to obtain measures of classroom climate, based on student ratings.[37] Published reliabilities (Cronbach Alphas) for the apathy and difficulty scales, based on 11th and 12th grade students are over .80. The reported reliability for the satisfaction scale, based on 8-12 year olds, is 77.

The project pilot-tested the apathy and satisfaction scales, as well as scales for goal direction, diversity and disorganization, with 5th and 6th grade classes. Cronbach alpha coefficients were computed for each of 16 classes. For the apathy scale, the range of coefficients was .00 to .71, with an average of.51.[38] The Cronbach alpha coefficients for goal direction, diversity and disorganization all averaged less than .40. These coefficients were based on the item modifications and response formats used in the present study.

Based on initial pilot testing, the pairs of items making up scales in Steele's Classroom Activities Questionnaire[39] were modified substantially to make the vocabulary suitable for 5th and 6th graders. Responses of students in 16 classes to pairs of items were analyzed for consistency and agreement on a class by class basis, using Steele's criteria. Measures of both dimensions varied with item pairs and with classes. Generally, agreement (50% or more of the students in a class agreed that an activity was a characteristic of the class) was lower than consistency (2/3 or more of the students in a class gave the same response to both items in a pair). In this, study scale scores were based on the sum of ratings of both items in a pair which is a departure from Steele's method of scoring. The reason was that consistency was considered more important than agreement, as Steele used the latter term.

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[37] Anderson, Gary J. The Assessment of Learning Environments: A Manual for the Learning Environment Inventory and the My Class Inventory. Atlantic Institute of Education, Halifax, Nova Scotia, Canada, 1971.

[38] Reliabilities for students, regardless of classes, for the apathy scale were .55, and .65 for the satisfaction scale.

[39] Steele, Joe M., Dimensions of the Classroom Activities Questionnaire. University of Illinois, Urbana, Illinois, October, 1969.

With respect to teacher scales, Kerlinger and Pedhazur reported reliability coefficients (Cronbach alphas) for a number of samples of teachers that range from .69 to .82 for the Education Scale VII progressivism and (ES VII) traditionalism scales.[40] Pedhazur reported a coefficient of stability with a two-week interval for the Teachers at Work (TAW) scale of .82 for teachers.[41] The Antioch project did not undertake to re-evaluate ES VII or TAW reliabilities.

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40. Kerlinger, Fred N., and Pedhazur, Elazar J. Attitudes and Perception of Desirable Traits and Behaviors of Teachers. Final Report. Projects No. 5-0330, Contract No. OE-5-10-024. New York University, New York, N.Y., Sept. 30, 1967. See esp., Table VII-2.

41. Pedhazur, Elazar J., Pseudoprogressivism and assessment of teacher behavior. Educational and Psychological Measurement, 1969, 29 (2), 377-386.